

THE *Soybean Digest*

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in developing markets for American
Soybeans.

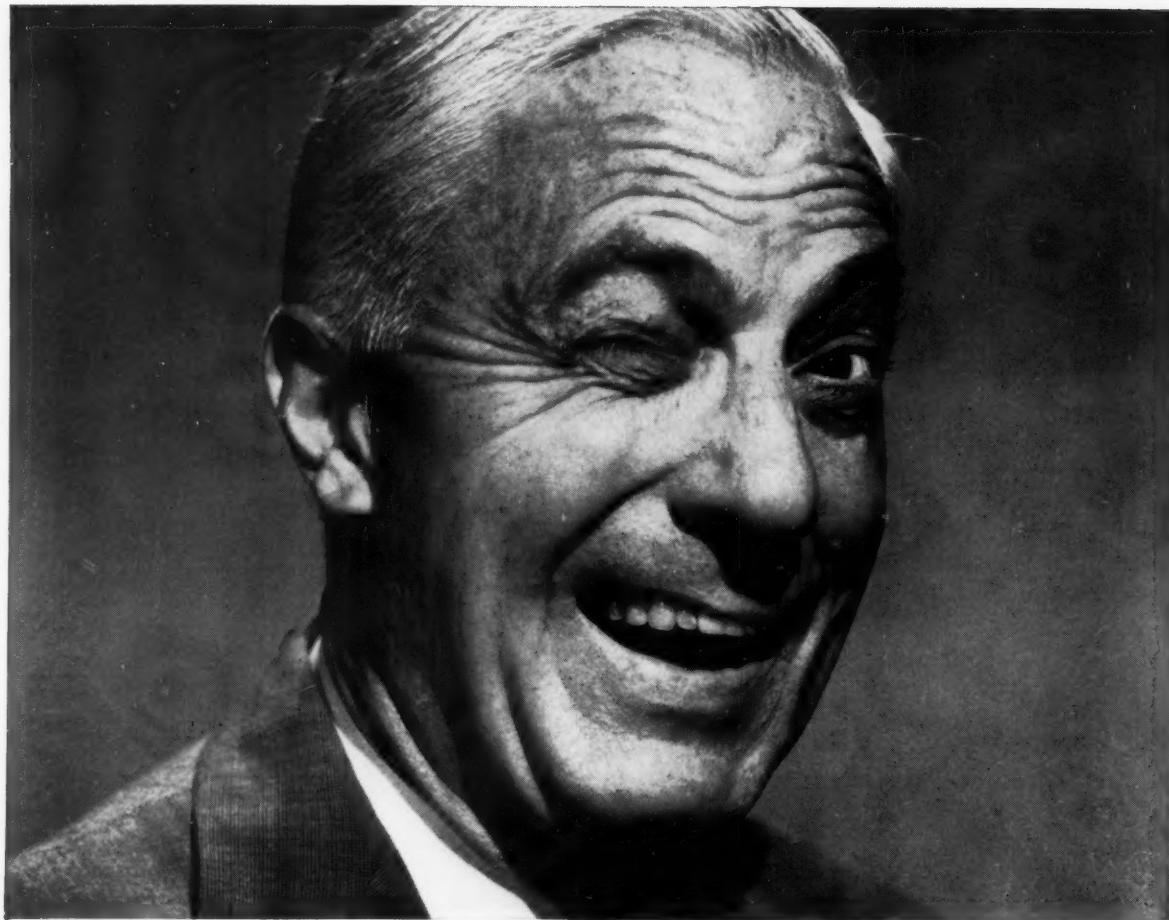
We must go far beyond our present efforts.
We must do more than talk about it—
we must act.—Geo. M. Strayer.

Executive vice president, American Soybean Association

AMERICAN SOYBEAN ASSOCIATION CONVENTION ST. LOUIS, MO., AUG. 11-12

AUGUST • 1959

VOLUME 19 • NUMBER 10



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THE Soybean Digest

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Official Publication of American Soybean Association and
Soybean Council of America, Inc.

HUDSON, IOWA

Vol. 19

August, 1959

No. 10

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AUGUST, 1959

THE SOYBEAN DIGEST

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THE AMERICAN SOYBEAN ASSOCIATION

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Objectives of the American Soybean Association include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safeguarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the members of the Association.



EDITOR'S DESK

By GEO. M. STRAYER

SHIFT THE BURDEN TO SOYBEANS?

In spite of the tremendous 1958 soybean crop we still have the advantages of an active soybean market—one in which the support price is not also the ceiling price, and one in which people from throughout the world are buyers. We have been blessed with such markets all through the period of years when other crops have been in surplus troubles.

A part of our good fortune is due to the wise leadership in the soybean industry. A part of it is due to the increased livestock population and the demand for soybean oil meal. A part of it is due to increased income levels in other countries, and the increased demand for fats and oils due to increased earnings. A part of it is due to increased consumption of fats and oils in what have been the raw material exporting countries, and the consequent smaller supplies of oil bearing materials available in world markets. A part of it is due to the tremendous amount of research work which has gone into product development and into increasing the efficiency of processing operations.

Whatever the major factors, the undebatable fact is that soybeans have had a favorable market condition all through the postwar years. It is now time we recognize it and start planning for the future.

The largest corn crop in history is staring us in the face. Much of it will go into price support programs. In Iowa we now have on hand a full year's supply before harvesting the current crop.

What of 1960? Shall we shift large acreages from corn to soybeans? By price support or other means? If we do, what happens to soybean markets? Is it desirable to solve corn support problems by inducing similar problems for soybeans?

It is now time for cool, careful analysis of just where we want to go in soybean acreage in 1960 and future years. We have benefitted by rather gradual but steady increases in soybean acreage through a period of years. In most cases, until the 1958 crop hit us, we have been able to consume and market the crop before a new one was ready for harvest. We have had a stable industry because of it.

There will be terrific pressures exerted to transfer some of the problems of corn, wheat and cotton surpluses to the soybean crop. Our industry must decide the direction in which we want to travel, and then use all possible influence in

the formation of governmental programs which may make or break our industry in attempts to solve other people's problems.

It is time for intelligent planning in our industry!

AUGUST WILL TELL THE TALE Elsewhere in this issue are several reports on current soybean crop conditions. Not all of them agree—for the weather man has treated different areas in different ways. Like the three blind men who encountered the elephant, different men see the same crop through different eyes.

One fact is now established—the soybean acreage is 8% smaller than a year ago. Much of the reduction has come in the high yield areas. Much of the increase has come in more marginal production areas. It is established we will not have as large a crop as a year ago.

About the time you receive this issue the Aug. 10 USDA crop report will give the first indication of expected yields, and of the crop in terms of bushels. Keep in mind that in much of the nation the month of August makes or breaks the soybean crop. Hot weather or drouth can cut millions of bushels off the crop. Favorable weather conditions can increase average yields and thus total production. Any estimate at the first of August can be at best only a preliminary guess. Much can happen between Aug. 1 and Sept. 15 to influence yields.

WATCH ALL FACTORS CLOSELY The uncertainties of the 1959 crop and the market prices for it make it doubly important that producers, handlers, processors and users of soybeans take a close look at the factors which may influence the soybean business.

Those who are most interested will get the picture in as complete form as possible at the St. Louis convention on Aug. 11 and 12. Manuscripts of the speeches presented will come to you in the September Special Convention issue. I suggest you read them closely and carefully, then interpret them in light of your own operations. The September issue, about twice normal size, will be a good guide for coming months.

In the meantime I suggest you read carefully the summaries of 1958 crop disappearance in this issue. Exports are well above any previous level. Total bushels processed are the greatest in history. Anticipated carryover is now well below previous estimates. With a smaller crop now being produced what does it mean in soybean markets?

American Soybean and National Soybean Processors Association Members

Welcome to St. Louis and Checkerboard Square

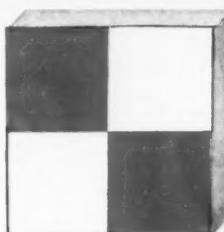
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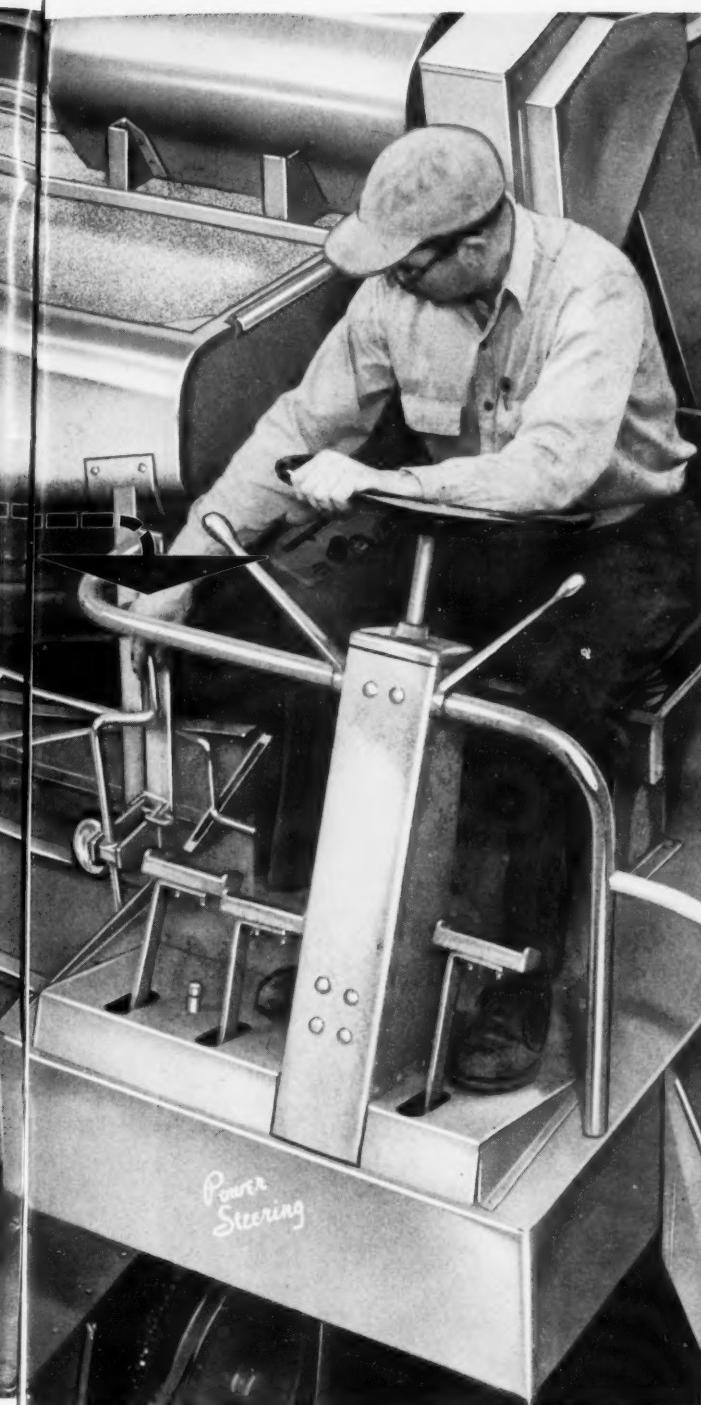
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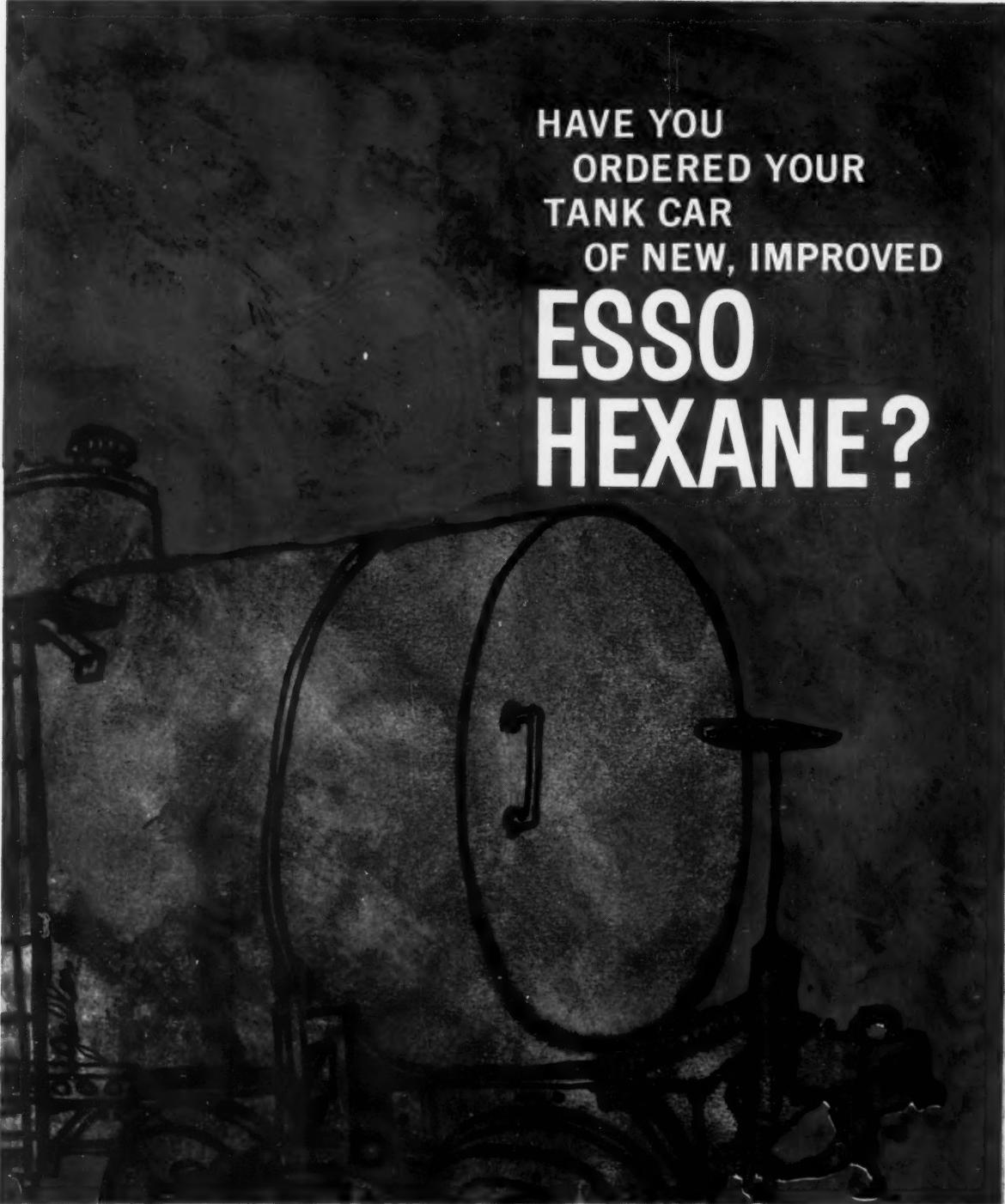
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THE NEWS IN BRIEF

THE CROP, MARKETS AND OTHER ITEMS OF NOTE

Polish Team To Visit United States

Plans are being made for a Polish technical team to tour U. S. soybean processing plants, oil refineries and manufacturing plants, the trip to be sponsored by the Soybean Council of America, Inc., and the U. S. Department of Agriculture's Foreign Agricultural Service.

The Soybean Council will be well represented at trade fairs around the world this fall in cooperation with the U. S. Department of Commerce. A representative of SBC will supervise the Anuga Fair at Cologne, Germany, Sept. 26-Oct. 4. Lima, Peru, will be the site of a South American trade fair Oct. 1-18, with a Council exhibit of soybeans and soybean products planned. David R. Farlow, assistant to Geo. M. Strayer, the Council's executive director, leaves immediately following the ASA convention for the trade fair at Madras, India, where he will be in charge of the Council exhibit Sept. 1-30. The doughnuts there will be fried in soybean oil and the doughnut mix will contain 15% soy flour, Dave says.

Cremona, Italy, will be the September site for a livestock seminar and fair participated in by the Council. A week-long visit of Italy's livestock centers is planned in conjunction with this meeting. On Oct. 7-11 SBC will be represented at a livestock seminar in Valladolid, Spain.

Some Late Reports On Crop

General rains along with warm, humid weather in late July relieved the drought threat for the moment in dry areas of Missouri, Illinois, Indiana and Michigan, but not enough was received to build up any reserve moisture and more rain was needed soon. The Illinois crop reporting service noted that a few dry spots remained in east central Illinois.

Arkansas Weekly Weather and Crop Bulletin reported that late July rains were very beneficial in the localities in that state that had been dry.

But total rainfall for June and July at Illinois, Indiana and Ohio points averages much below the same 2 months last year, according to Weather Bureau reports, which indicate that a dry August could cause trouble in these heavy producing states.

Total precipitation in inches for June and July at 10 points with 1958 months in parentheses: Cleveland 6.40 (8.76); Des Moines 7.33 (15.30); Indianapolis 4.00 (14.24); Memphis 11.06 (7.23); Minneapolis 6.48 (4.92); Peoria, Ill., 3.76 (13.21); Quincy, Ill., 3.08 (18.20); Raleigh 10.18 (7.04); Vandalia, Ill. 2.08 (12.47); Washington, D. C. 7.91 (10.12).

Some last-minute reports as the Soybean Digest went to press:

Quoting J. E. Johnson, Champaign, Ill.: "Seldom see as many fine fields as we have this year. Less weeds, stands good, not as tall as usual. General growing conditions very good."

Archer-Daniels-Midland Co. reported in late July: "One of our men on an extensive field trip through Illinois, Indiana, and parts of Missouri estimated that the yield has already been reduced 2 bushels below last year's record."

Louis Brewster, General Mills, Inc., reported after a trip from St. Louis to Chicago July 20-22 that over the entire state of Illinois the crop was in as good or better condition than this time a year ago.

And Trade News Service, New York, quotes Baldwin Elevator Co., Decatur, Ill., as figuring the Illinois state yield at 1½ bushels below last year's record 28 bushels as of July 24.

Maryland-Delaware Crop Reporting Service: Soybeans are making excellent progress except for some poor stands in a few scattered areas. A few fields were still being planted where soils were not too wet.

Iowa Weekly Weather and Crop Bulletin: Bloom was showing on

about 50% of the soybean plants by July 27 compared with 40% on the same date last year.

Kansas Weekly Weather and Crop Report: Soybeans have developed well and a heavy bloom is reported.

**Nematode
Damage
Worse**

Soybean cyst nematode infestation and damage are much worse this year than last in Missouri, Arkansas and Tennessee soybean fields, according to investigators.

Johnson at Champaign, Ill., reports a sizable amount of disease in many fields in his area, with plants dying. Chester B. Biddle, Remington, says root rot is showing up in northwestern Indiana. And John R. Thompson at the University of Minnesota South Station, Waseca, reports bacterial blight to be very heavy on some early varieties.

**Record
Hedging in
Soybeans**

Although futures trading in soybeans decreased in the fiscal year that ended June 30 as compared with the previous year, hedging in soybean futures to cover price risks on large supplies from the record 1958 soybean crop was at an alltime high, according to Roger R. Kauffman, Commodity Exchange Authority administrator. Also there was record hedging activity in the meal and oil last year, according to Kauffman.

Soybean futures volume was 2.8 billion bushels compared with 3.9 billion bushels in the previous year. Futures trading in soybean oil on the Chicago Board of Trade was 9.4 billion pounds, an increase of 5½% over 1957-58. A record 18.8 million tons of soybean meal futures traded on the Chicago Board of Trade was three times the previous year's volume.

**Grain
Grading
Meeting**

The American Soybean Association was represented at a meeting in Washington, D. C., the latter part of July to discuss the possibility of having U. S. grains including soybeans graded at Montreal, Quebec, Canada, for export. The Department of Agriculture favors such a plan. Opening of the St. Lawrence Seaway makes this more desirable.

**W. J. Morse
Passes**

W. J. Morse, known as the founder of the soybean crop and industry in the United States, died of a stroke early in the morning of July 30 at his home in Eastchester, N. Y. Mr. Morse retired in 1949 from the U. S. Department of Agriculture, where he headed soybean development work. He was active in the Department 42 years. In the late 20s he went to the Orient, where he collected many of the varieties that have formed the foundation for the present soybean crop. He was one of the founders of the American Soybean Association and three times president.

Coleman Crews, 53, Keiser, Ark., soybean producer and land owner, died July 27. Burial was at Osceola, Ark., July 29. Mr. Crews, who lived in Mississippi County, Ark., most of his life, was one of the earlier leaders in soybean production in eastern Arkansas. He was a member of the American Soybean Association, a frequent attendant at Association conventions and active on its committees.

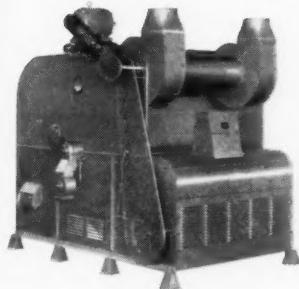
The Arkansas Grain Corp., an affiliate of the Arkansas Rice Growers Cooperative Association, plans to build a \$1.5-million solvent extraction plant for soybeans at Stuttgart, Ark., and will begin processing the 1960 crop. Plant capacity will be 500 to 700 tons daily.

Private interests in Venezuela plan to build a soybean oil hydrogenation plant with an annual operating capacity of 6,000 metric tons, USDA reports. In addition, an extraction plant already in operation will be expanded to a capacity of around 25,000 metric tons per year. The oil will be used to supply the hydrogenation plant and the meal to satisfy demand from a rapidly expanding mixed-feed industry.

Production of mellerine and other frozen desserts made with fats and oils other than milk fat for the first 6 months this year was 21,115,000 gallons as compared with 19,510,000 gallons in the first 6 months last year and the 5-year average of 15,033,000 gallons, USDA reports. June production of mellerine was up about 10% from May and also from June last year.



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ASA's 39th Convention

Hotel Sheraton-Jefferson, St. Louis, Mo. Aug. 11-12

**The theme, speakers, the men in charge,
committees, exhibitors**

The Men in Charge

JOHN SAWYER, president American Soybean Association, London, Ohio. John is finishing a second busy year as president during a period when ASA has been coming of age and exports have assumed major importance in our soybean economy.

Geo. M. Strayer, executive vice president, American Soybean Association, Hudson, Iowa. George has been your executive officer and in direct charge of every convention since 1940.

David R. Farlow, assistant to the executive vice president, Hudson, Iowa. This is Dave's first convention, but he has managed most of the details of this one.

Geo. McCulley, business manager, American Soybean Association, Hudson, Iowa. George is in charge of exhibits and the registration desk, as he has been every year for the past 12.

Kent Pellett, managing editor, the Soybean Digest, Hudson, Iowa, is in charge of the press room, as he has been every year since 1942.

R. E. Hutchison and John Hendrickson, veteran advertising representatives for the Soybean Digest, and David B. Bramson, the new cir-

culation manager, will be in charge of the Soybean Digest booth.

These are the committees who will be in charge of and will function during the convention:

Executive. John Sawyer, London, Ohio, chairman; C. G. Simcox, Assumption, Ill.; Geo. M. Strayer, Hudson, Iowa; Albert Dimond, Lovington, Ill.; and David G. Wing, Mechanicsburg, Ohio.

Convention. John Butterfield, Pana, Ill., chairman; Albert Dimond; O. H. Acom, Wardell, Mo.

Resolutions. Chester B. Biddle, Remington, Ind., chairman; John W. Evans, Montevideo, Minn.; O. H. Acom; A. E. Jolley, Chatham, Ontario; Howard L. Roach, Plainfield, Iowa; John Butterfield; Walter M. Scott, Jr., Tallulah, La.; Charles V. Simpson, Waterville, Minn.

Market Development. Ersel Walley, Fort Wayne, Ind., chairman; Charles Simpson; John Butterfield.

Awards. C. G. Simcox, chairman; Albert Dimond; John Evans.

Nominations. David G. Wing, chairman; Chester B. Biddle; Jake Hartz, Jr., Stuttgart, Ark.

Committee to Study Future Conventions. David G. Wing, chairman; Chester B. Biddle; Coleman Crews, Keiser, Ark.

Convention Theme

"The World Needs More Soybeans" was suggested as a convention theme by Ersel Walley, chairman of the ASA market development committee.

Years ago Mr. Walley coined the slogan, "Soybeans Are Worth More Money," to emphasize the high intrinsic nutritive value of soybeans. And for a number of years this slogan appeared on every letter sent out by the ASA executive office.

Concerning this year's convention theme, Mr. Walley notes that at the same time the United States has farm surpluses, there are 1.2 billion people living outside the Iron and Bamboo curtains who have an average daily diet of not over 2,000 calories. Supplying the needs of only a small percentage of these people would require more food than any surplus we have yet experienced from U. S. farms, he says.

"We do not believe it is too visionary or unrealistic to suggest that where there is a need for food, there is an opportunity for U. S. agriculture," says Mr. Walley.

The Speakers

Dominic Marcello, director of Italian operations for the Soybean

Some of Your Convention Speakers . . .



Russell Hudson



H. W. Johnson



Ersel Walley



A. K. Smith

Council of America, Inc., at Rome, has had a hand in many of the Council's soybean exhibits in Europe. Mr. Marcello was on our program last year.

Russell J. Hudson, marketing specialist in the fats and oils division of USDA's Foreign Agricultural Service, has also been closely associated with soybean market development work abroad, and his travels in this effort have been worldwide.

Elmer Kiehl is chairman of the department of agronomy at the University of Missouri, Columbia.

Ersel Walley has made repeated trips abroad in behalf of export markets for U. S. soybeans. He just recently returned from Japan. He is ASA past president, an honorary life member, and has been most active in ASA affairs for many years.

Luther J. Pickrel is extension economist at the University of Minnesota where a project is under way researching the possibilities of expanding markets for soybeans both at home and abroad.

G. E. Hilbert, administrator, Agricultural Research Service, U. S. Department of Agriculture, appeared on ASA convention programs in the past when he was director of the Northern Regional Research Laboratory at Peoria, Ill.

W. Clifford Witham is assistant director of the Northern Regional Research Laboratory at Peoria.

Rev. Clarence G. Hall, the banquet speaker, is pastor of the First Methodist Church at Catlin, Ill., and a member of the Illinois General Assembly.

Herbert W. Johnson, who has been in charge of the soybean improvement program of the U. S. Department of Agriculture at Beltsville, Md., since 1953, is well known to ASA convention attendants, since he has appeared frequently on our programs.

R. G. Hodgson is superintendent of

Your ASA Officers



Left to right, President John Sawyer, London, Ohio; Executive Vice President Geo. M. Strayer, Hudson, Iowa; and Vice President C. G. Simcox, Assumption, Ill.

the Southeast Minnesota Experiment Station at Waseca.

Joseph F. Spears has been in charge of a number of nematode control programs for the U. S. Department of Agriculture, including the golden nematode control program on Long Island (potatoes) and the burrowing nematode program in Florida (citrus, avocados and ornamentals) as well as the soybean cyst nematode control program.

Dr. A. K. Smith, head of the meal products investigation of the oilseed crops research laboratory, U. S. Northern Regional Research Laboratory at Peoria, has appeared many times on ASA programs. He went to Japan to determine how U. S. soybeans can be handled and processed to increase their use as food by the Japanese people. At present he is working with two Japanese scientists on these problems at the Peoria laboratory.

The two scientists are Tokuji Watanabe and Kazuo Shibasaki who

together prepared the paper to be given by Mr. Watanabe.

T. A. Hieronymus, associate professor of agricultural marketing at the University of Illinois, has made several soybean price forecasts on ASA convention programs.

Your Exhibitors

Albert Dickinson Co., Chicago, Ill.
Hot Spot Detector, Inc., Des Moines, Iowa.

Crown Iron Works, Minneapolis, Minn.

Merrill Lynch, Pierce, Fenner & Smith, Inc., Chicago, Ill.
A. T. Ferrell & Co., Saginaw, Mich.
Urbana Laboratories, Urbana, Ill.
Shanzer Manufacturing Co., San Francisco, Calif.

Radson Engineering Corp., Macon, Ill.

R. W. Booker & Associates, St. Louis, Mo.

V. D. Anderson Co., Cleveland, Ohio.

Columbian Steel Tank Co., Kansas City, Mo.



Elmer Kiehl



T. A. Hieronymus



G. E. Hilbert



Luther J. Pickrel

California Spray Chemical, Mary-
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Simon-Carter Co., Minneapolis,
Minn.
Seedburo Equipment Co., Chicago,
Ill.
PTC Cable Co., St. Paul, Minn.
Soybean Council of America, Inc.,
Hudson, Iowa.
The Soybean Digest, Hudson, Iowa.
Black, Sivalls & Bryson, Inc., Kan-
sas City, Mo.

Seaman Bag Co., Chicago, Ill.
Port of New Orleans, New Orleans,
La.
N. Hunt Moore & Associates,
Memphis, Tenn.
Sutton Steele & Steele, Dallas,
Tex.
Eastern States Petroleum & Chem-
icals, Oak Park, Ill.
Meals for Millions Foundation, Los
Angeles, California.

ASA Convention Program

Tuesday, Aug. 11

9:00 a. m. Mezzanine floor

Exhibits open.

9:30 a. m. Crystal room

Opening music.

Welcome to Missouri, J. S. Williamson, Commissioner of Agriculture, State of Missouri, Jefferson City.

"What the Soybean Council of American Is Doing," Dominic Marcello, director of Italian operations, Soybean Council of America, Rome.

"Market Development of U. S. Oilsseeds and Oilseed Products," Russell Hudson, marketing specialist, fats and oils division, Foreign Agricultural Service, U. S. Department of Agriculture, Washington, D. C.

"The Protein Situation," Elmer Kiehl, chairman, department of agricultural economics, University of Missouri, Columbia, Mo.

1:30 p. m. Crystal room

Opening music.

"The World Needs More Soybeans," Ersel Walley, chairman, market development committee, American Soybean Association, Fort Wayne, Ind.

"Another Look at Selling Soybeans," Luther J. Pickrel, extension economist in public affairs, University of Minnesota, St. Paul, Minn.

"Research Projects in Foreign Countries Using P. L. 480 Funds," G. E. Hilbert, administrator, Agricultural Research Service, U. S. Department of Agriculture, Washington, D. C.

"Recent Progress in Soybean Utilization Research," W. Clifford Whittem, assistant director, Northern Utilization Research and Development Division, Peoria, Ill.

6:15 p. m. Crystal room

Reception, sponsored by the St. Louis Merchants Exchange.

7:00 p. m. Gold room

Annual convention banquet.

Entertainment.

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Speaker, Rev. Clarence G. Hall, Catlin, Ill.

Wednesday, Aug. 12

9:00 a. m. Mezzanine floor

Exhibits open.

9:00 a. m. Crystal room

Annual business meeting, American Soybean Association.

10:00 a. m. Crystal room

"Recent Advances in Soybean Production Research," Herbert W. Johnson, head, soybean section, crops research division, Agricultural Research Service, U. S. Department of Agriculture, Beltsville, Md.

"Beginning with Soybeans," Robert G. Hodgson, superintendent, Southeast Minnesota Experiment Station, Waseca, Minn.

"Recent Developments on the Soybean Cyst Nematode Infestation," Joseph Spears, plant pest control division, Agricultural Research Service, U. S. Department of Agriculture, Washington, D. C.

"Soybean Production in Australia," John E. Bligh, Queensland, Australia.

1:30 p. m. Crystal room

"Research on U. S. Soybeans for Japan," Allan K. Smith, oilseed crops laboratory, Northern Utilization Research and Development Division, Peoria, Ill.

"Japanese Scientists Look at U. S. Soybeans," T. Watanabe, Food Research Institute, Japanese Ministry of Agriculture and Forestry, and K. Shibusaki, faculty of agriculture, Tohoku, University (presented by Mr. Watanabe).

Panel, "Outlook for the Soybean Industry," Ersel Walley, chairman; Luther J. Pickrel; T. A. Hieronymous; Elmer Kiehl; Dominic Marcello; A. S. Kohl, director foreign operations, Spencer Kellogg & Sons, Inc., Buffalo, N. Y.; and Geo. M. Strayer, executive vice president, American Soybean Association.

"What Will We Get for 1959-Crop Soybeans," T. A. Hieronymous, department of agricultural economics, University of Illinois, Urbana, Ill.

1959 Annual Meeting National Soybean Processors Association

Monday, Aug. 10

9:15 a. m. Crystal room

Business session, limited to members and associate members.

12:30 p. m. Gold room

Luncheon, open to all registrants.

"The Role of Oil Bearing Seeds in Agriculture," John H. MacMillan, Jr., chairman of the board, Cargill, Inc., Minneapolis, Minn.

2:00 p. m. Crystal room

"It's Later Than We Think," Howard L. Roach, president, Soybean Council of America, Inc., Waterloo, Iowa.

"U. S. Soybean Oil in World Markets," D. J. Bunnell, buying vice president, Lever Brothers Co., New York, N. Y.

"Tomorrow's Demand for Protein Meal," Oakley M. Ray, director of market research, American Feed Manufacturers Association, Chicago, Ill.

5:30 p. m. Crystal room

Reception.

7:00 p. m. Ralston Purina Co. Auditorium, Checkerboard Square

Dinner and entertainment.

Tuesday, Aug. 11

8:30 a. m. Room No. 7

Directors' breakfast and meeting.

National Soybean Crop Improvement Advisory Board

Monday, Aug. 10

8:30 a. m.

"The Effect of Soil Moisture Levels Upon the Nutrient Uptake of the Soybean Plant," D. A. Brown.

"Comparative Returns of Corn and Soybeans," speaker to be selected.

"Current Soybean Research in the Soybean States," H. W. Johnson.

Report of Physiology and Nutrition Committee, J. B. Peterson.

2:00 p. m.

Afternoon session with processors.

5:30 p. m.

Annual reception.

6:30 p. m.

Bus service to Ralston Purina Co.

7:00 p. m.

Dinner and entertainment.

Tuesday, Aug. 11

9:00 a. m.

"The Soybean Disease Problem," J. M. Dunleavy.

"Breeding for Disease Resistance," H. W. Johnson.

"Soybean Cyst Nematode Research," C. A. Brim.

"Soybean Disease Research in the South," E. E. Hartwig.

"Soybean Disease Research in the North," J. L. Carter.

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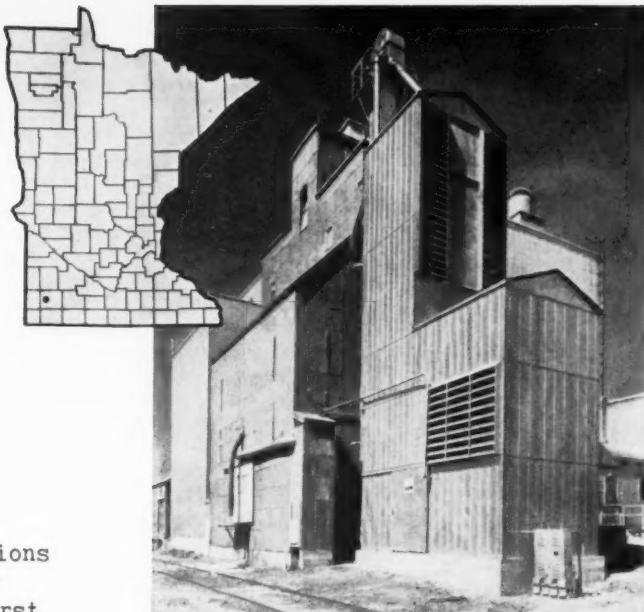
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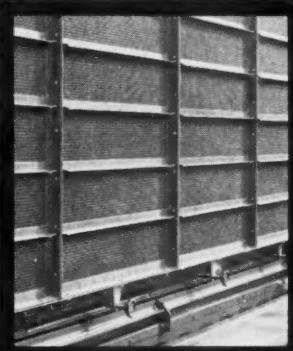
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"SOYTASH." One part soybeans and two parts corn. Would this dish be more acceptable to the public than soybeans alone?

The effect of Variety on Quality of FROZEN GREEN SOYBEANS

By KENNETH D. DEMAREE
U.S. Department of Agriculture, Agricultural
Marketing Service, Biological Sciences Branch,
Quality Evaluation Section

SOYBEANS are higher in protein and food value than any other plant material and are excellent as a source of vitamins, particularly thiamine. On the dry bean basis, there is twice as much protein in a pound of soybeans as in an equal quantity of beefsteak (4). The composition of fresh vegetable soybeans as taken from Chatfield and Adams (1) is as follows: water 67%, protein 12.5%, fat 6.5%, carbohydrates 6.0% and caloric value 132 calories per 100 grams.

In the United States a number of food products are made entirely or partly from the soybean, including baked beans, canned and frozen shelled green beans, bean sprouts, vegetable milk and cheese, frozen desserts, margarine, shortening, icings, candies, breakfast foods, diabetic foods, infant foods, macaroni, soups, sausage binders, soy sauce, and soy flour.

Materials and Methods

In this study of the influence of variety on quality of frozen shelled green soybeans, 18 named varieties and one new breeding line were tested in 1955-56. In 1957 only the eight varieties that were considered the best in previous organoleptic

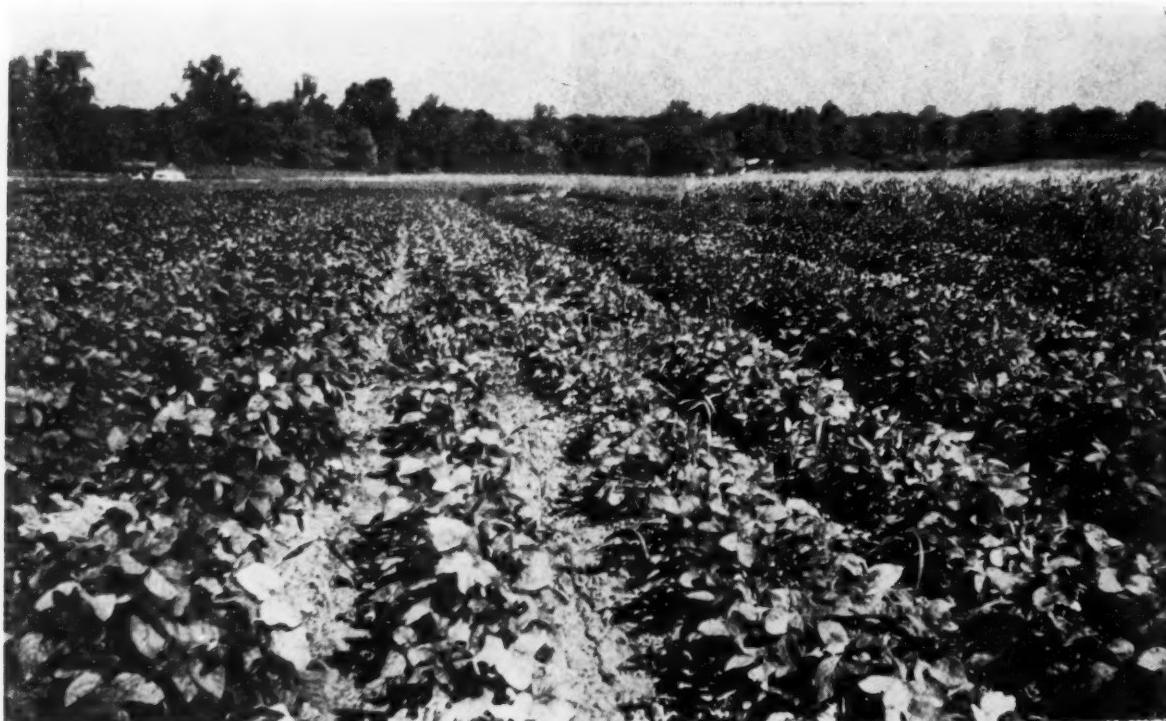
tests were used. They were all planted on the same date, but matured through a period of about 1½ to 2 months. Plantings were made on a sandy loam with 500 pounds of 5-10-5 fertilizer added per acre before seeding. They were sprayed with a mixture of malathion and methoxychlor several times during the growing season for the purpose of insect control.

When the beans reached what was considered to be the right stage of maturity for harvesting green, the plants were cut or pulled, shelled on a commercial-size lima-bean viner, cleaned with a Clipper cleaner, washed, blanched in a hot-water blancher for 6 minutes, cooled in a tank of cold water, packaged in quart-size food containers, and frozen in a cold-air freezer at -20° F. They remained at -5° to -10° F. for 3 months, then were taken out for examination.

Objective determinations of moisture, color, shear resistance, and oil content were made. Moisture was determined by drying a 25-gram sample for 16 hours at 110° F., followed by calculation of percent solids and moisture from the dried weight.

Color was determined by placing about 200 grams of thawed, drained beans in a plastic cell with an optically clear bottom and spinning this cell at 1,120 rpm over the view-

VEGETABLE SOYBEAN plots at Plant Industry Station, Beltsville, Md.



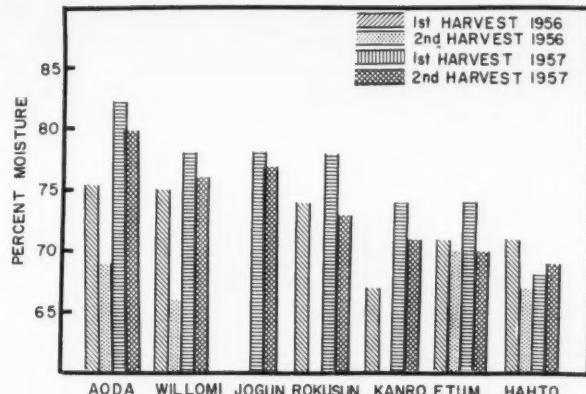


Figure 1. Moisture content for two harvests and two years.

ing head of the Hunter Color and Color Difference Meter after standardizing the instrument with the colored tile nearest to the color of the beans. ($Rd:25.7$, $a=-27.9$, $b=+6.9$). This instrument interprets color into the Y, X, and Z readings of the ICI color specifications. Dominant wavelength and percent purity were then calculated from these readings. Dominant wavelength is that wavelength of light which if mixed with the proper proportion of achromatic light will match the color of the sample. Purity is that proportion expressed as a percentage.

Shear resistance was determined by filling the general purpose cell of the Maryland Shear Press and recording the maximum reading. The amount of oil was determined by blending 25 grams of green beans with alcohol and petroleum ether in a Waring Blender for 10 minutes, separating the alcohol and ether fractions and evaporating the ether. Percent oil was then calculated on the green bean basis. Oil extracts were made in duplicate on two harvests for 2 years.

Taste tests were run on all varieties in 1956 in closed booths with controlled lighting. Samples were passed to judges through a port and flavor was judged under conditions where color influences were at a minimum. Four varieties were submitted to a judge at each sitting and ranked from most to least preferred. Ranks were converted to scores by the use of Fisher and Yates' tables (2), then analyzed for variance by conventional methods.

Results

The 1955 planting was essentially a preliminary study to learn the cultural methods and times of harvest for the different varieties. Most of the data reported in the present study are from crops grown in 1956 and 1957.

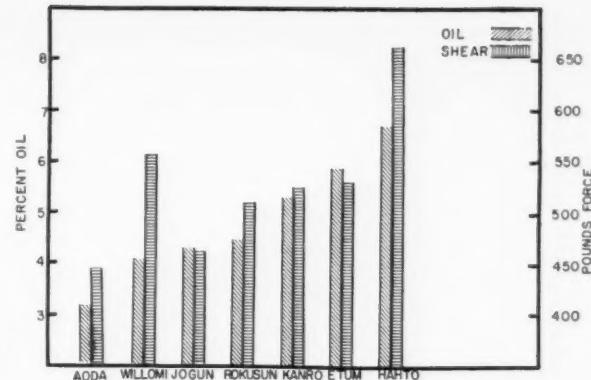


Figure 2. Relationship of shearing force to oil content.

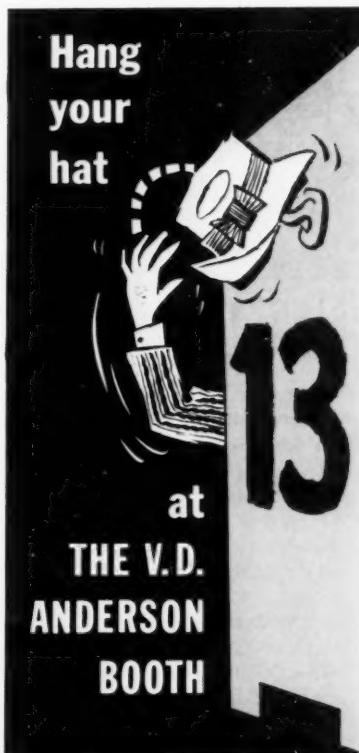
Moisture — When harvests were made a week apart in 1957 (figure 1) moisture of the beans of most varieties decreased about 3% per week. However, Jogun variety decreased only 0.5%, while Kanro decreased 2.2% in 1 week. Hahto actually increased in moisture by 1.1% during one particular week. The best possible explanation is that the summer was exceptionally dry, but fall rains started just before the harvest of the Hahto variety and possibly these beans were still enlarging and taking up water.

Color — Dominant wavelength of the various varieties grown in 1956 ranged from 563 mu (blue green) to 574 mu (yellow green) with an average of 569.4 mu, while purity ranged from 44% to 64%. In 1957, the range in dominant wavelength was from 560.5 mu to 571.0 mu with an average of 565.5 mu, while purity ranged from 55% to 61%. Even though the dominant wavelength varied 11 mu among varieties for each of the 2 years, those readings made in 1957 indicate the soybeans were generally harvested at a more immature stage than those of 1956. This was more clearly shown in a comparison of the moisture content (figure 1) for the 2 years, since green soybeans evidently reach a plateau in their development where very little change in color takes place. In a period of 1 week, color changed only 0.3 mu in some varieties. This small change would not be visible to the human eye.

Oil Content — This was found to vary with variety and stage of maturity. Percent oil on the green bean basis ranged from 3.5 for Aoda to 7.2 for Hahto. Oil content increased about 1% between harvests, while moisture decreased about 3% in the same length of time. Hahto has one of the highest oil contents of the vegetable-type beans; yet, it was

considered among the eight best in flavor evaluation. In the taste panel work, the judges seemed to divide themselves into two distinct groups in their preference for beans of higher or lower oil content.

Shear Resistance — This appeared to be a quick way of indicating oil content (figure 2) and it also gives an indication of seedcoat toughness. Curves of the Shear-Press readings and percent oil were almost parallel, with Aoda having the lowest reading and Hahto having the highest; the other varieties, with the exception of



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CONVENTION

DESCRIPTION OF VARIETIES USED

Variety	Green bean color	Maturity ¹ classification	Hilum ¹ color	Seed size ¹ number per pound	Oil ¹ percent dry	Oil percent green bean	Protein ¹ percent
Aoda	Med. green	Midseason	Light brown	1,400	18.2	3.5	46.2
Bansei	Yellow green	Early	Pale brown	2,300	20.4	9.3	44.2
Chusei		Midseason	Pale brown	2,100	18.2	....	45.3
Emperor	Light green	Midseason	Light brown	1,200	20.0	7.0	43.4
Eturn	Light green	Early	Light brown	1,600	19.0	5.9	44.8
Funk Delicious	Yellow green	Midseason	Pale brown	1,600	21.4	6.2	40.4
Hahto	Light green	Midseason	Black	1,200	18.7	7.2	42.3
Imperial	Blue green	Midseason	Light brown	1,900	19.4	6.2	43.0
Jogun	Light green	Early	Light brown	1,400	17.1	4.3	42.9
Kanro	Light green	Early	Brown	1,500	19.0	5.4	43.7
Kanum	Blue green	Early	Brown	1,800	19.1	....	44.4
Mendota	Light green	Early	Brown	2,100	17.5	7.0	40.9
Rokusun	Light green	Late	Brown	1,600	18.5	5.1	46.4
Sousei	Light green	Early	Brown	1,800	20.7	....	44.1
Tastee	Blue green	Midseason	Black	1,500	20.2	5.7	40.4
Willomi	Blue green	Midseason	Light brown	1,300	18.2	5.3	44.3
Wolverine	Blue green	Midseason	Light brown	1,800	21.2	6.0	39.4

¹ Data and descriptions in these particular columns are from U. S. Department of Agriculture Farmers' Bulletin 1520 (3).

Willomi, fell in line with the percent oil. Linear correlations between Shear-Press readings and extracted oil gave an "r" value of .951.

This has not been proven with mature combined beans, but the same relationship should exist. In some of the automatically recorded curves of shearing force, there was a secondary peak which may be a measurement of the seedcoat toughness. This occurs with sweet corn pericarp and may be true for soybeans as well, since only certain

varieties consistently show this secondary peak.

Palatability — From this taste panel work, it appeared that some of the judges preferred the beans of a higher oil content, whereas other judges preferred beans with less oil. As was pointed out previously, Aoda variety was very low in oil. One of the larger U. S. soybean canners uses this variety exclusively for its canned green soybeans, probably because of this fact.

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were analyzed statistically to determine which variety or varieties were significantly different to the taste panel members. This analysis showed that seven varieties were more acceptable than the others. These were Hahto, Rokusun, Tastee, Aoda, Eturn, Willomi and Kanro. This preference is relative, and general acceptability of soybeans is rather low. Possibly, a mixed product containing corn would be more acceptable to the general public. This laboratory has made up a corn-soybean mixture tentatively called "soytash." This soytash is very nutritious and eye-appealing. In 1957, one of the large frozen food packers put up a test pack of the corn-soybean mixture to add to its line of commodities.

Related Studies

Along with the tests on quality of soybeans, some preliminary experiments were performed to find the effects of defoliation on the vining of the green beans.

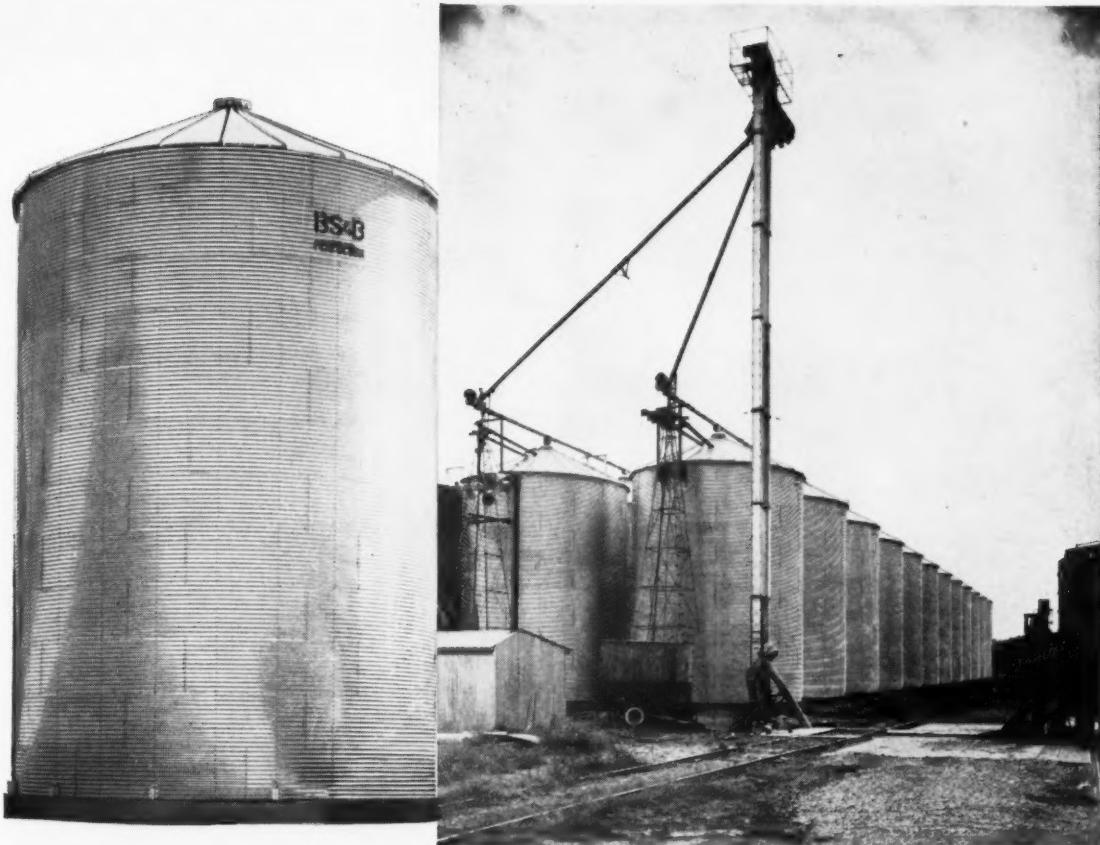
By defoliating, some of the bulk is left in the field so that effective action of the beaters is increased and better recovery results. The defoliant used is a calcium-chlorate preparation and the calcium seems to cause the vines and pods to become more brittle without causing excessive dehydration of the green beans. The brittleness of the pods increases the shellout recovery about 15%.

It is believed that the best current commercial opportunity for increasing consumption of vegetable-type soybeans lies in production of a "soytash" mixture. Basic work in plant breeding to improve vining characteristics, to eliminate dark hilum, to improve shape, and to attain more generally acceptable flavor also represents an avenue of endeavor which has not been adequately explored.

Acknowledgement — The cooperation of Miss Jane V. Ernest, food technologist, quality evaluation section, who conducted the taste panel evaluations, and assisted in processing the samples, is gratefully acknowledged.

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- Fisher, R. A., and Yates, F. Statistical tables. Oliver and Boyd, Ltd., Edinburgh and London, 1942.
- Morse, W. J., Carter, J. L., and Williams, L. F. Soybeans—Culture and Varieties. USDA Farmers' Bull. No. 1520, Aug. 1949.
- Watt, Bernice K., and Merrill, Anna-L. Composition of Foods—Raw, Processed, Prepared. USDA Agriculture Handbook No. 8, p. 46. June 1950.



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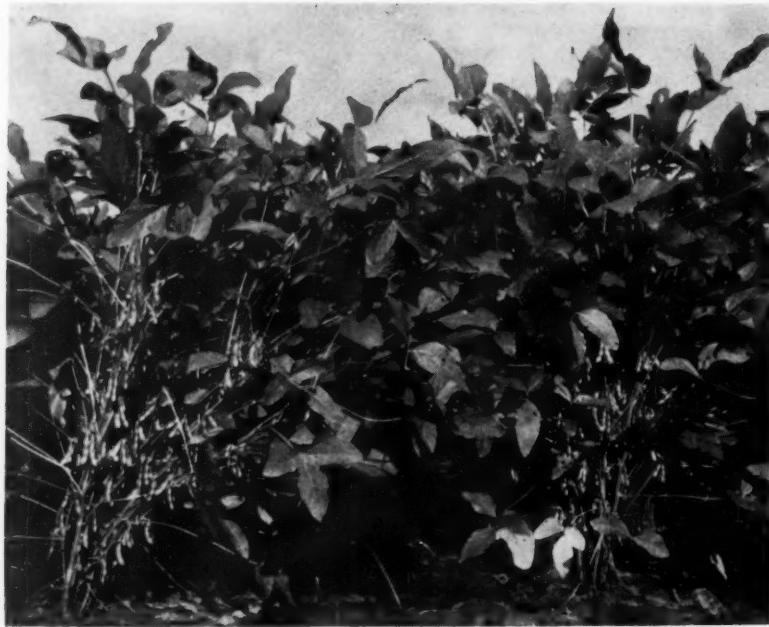


Figure 1—Hill soybeans prior to maturity showing pod development.



Figure 2—Mature plants of Hill soybeans.

Hill, a New Early Maturing Soybean for the South

By E. E. HARTWIG*

HILL IS A NEW high yielding, shatter resistant, and disease resistant variety slightly earlier in maturity than Dorman. Seed is being increased in Delaware, Maryland, Virginia, North Carolina, Missouri, Arkansas, Mississippi, Texas, and New Mexico. It will be available for seed producers in 1960 and should be generally available for planting in 1961. The area of best adaptation is shown in the shaded area on the map.

In much of the South where Hill is adapted, it probably will be grown as an early variety along with Hood or Lee to give an extended harvest period. Also, it probably will re-

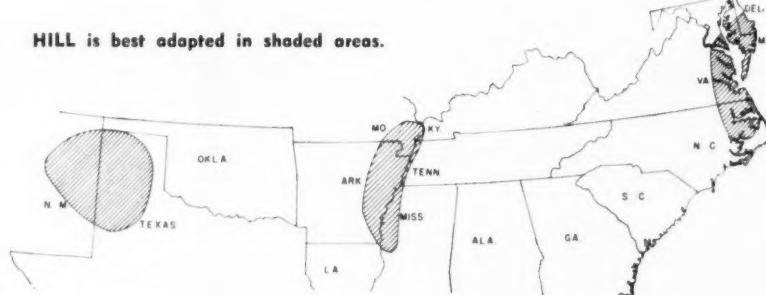
place a fairly large percentage of the later maturing varieties grown in Delaware and on the eastern shore of Maryland.

In general appearance Hill closely resembles the Lee variety, but it is 21 to 28 days earlier in maturity. It has tawny pubescence and a light pod wall as does Lee and has a similar plant type. It is also comparable with Lee in shatter resistance and in resistance to the major foliar diseases, bacterial pustule, wildfire, and frogeye. In addition to

being earlier, Hill differs from Lee in that it has white flowers and the seed has a light brown hilum. The seed is slightly smaller than that of Lee. The heavy foliage and plant type of Hill are illustrated in figures 1 and 2.

On the basis of all comparisons, Hill averages 2 days earlier than Dorman. However, in the more northern areas where Dorman is grown, it has averaged a week earlier than Dorman. Hill is superior to Dorman in resistance to

HILL is best adapted in shaded areas.



*Research agronomist, crops research division, Agricultural Research Service, U. S. Department of Agriculture, working in cooperation with the Delta Branch Experiment Station, Stoneville, Miss.

TABLE 1.—COMPARATIVE SEED YIELD AND CHEMICAL COMPOSITION OF HILL AND DORMAN FOR THE YEARS 1955-58.

Variety	Seed Yield in Bushels Per/A			Protein %	Oil %
	East Coast	Delta	West		
Hill	34.8	33.4	25.6	39.4	21.2
Dorman	34.9	31.0	24.2	39.0	21.3

the major leaf diseases and to lodging. In plantings in the western area over the past 4 years, it has averaged 6% higher in yield than Dorman, while during the same period it has averaged 8% higher in yield than Dorman in the Delta area. The comparative seed yield and chemical composition for Hill and Dorman are reported in table 1.

Hill has been free from any evidence of purple seed stain development under conditions where some varieties of comparable maturity have had over 50% of their seed stained purple. It apparently has a high degree of resistance to the common root knot nematode and has field resistance to Phytophthora rot.

The Hill variety was developed and tested by research workers of the U. S. Regional Soybean Laboratory and cooperating experiment stations in the Southern States. Selection of the name Hill follows in a series of naming soybean varieties developed in the southern regional research program after Confederate generals. Others in this series are Lee, Jackson, and Hood.

This strain has been tested at approximately 30 locations in the Southern States in each of the past 4 years. It is a selection from a cross between two experimental lines, D632-15 and D49-2525, made in 1949 by Edgar E. Hartwig working at the Delta Branch of the Mississippi Experiment Station. D632-15 was a selection from the cross Haberlandt x Dunfield made by J. A. Rigney in North Carolina in 1941. Third generation selections from the cross were sent to Stoneville, Miss., and reselected. The selection D632-15 was extensively tested but did not perform well enough to merit release as a variety. D49-2525 is a selection from the cross S-100 x CNS made by Hartwig while working at the North Carolina Agricultural Experiment Station. D49-2525 is closely related to the Lee variety and is similar in appearance and nearly comparable in performance. In this second cycle cross it was possible to get combi-

nations of desired characters not present in either of the first cycle crosses.

Hill is an advanced F₅ line. It was thoroughly tested in plantings at the Delta Station before being advanced to the regional tests. Seemingly the qualities possessed by this variety will permit soybean growers in the area where it is adapted to increase the percentage of their crop planted to an earlier maturing variety without appreciably reducing their production.

Dannen Grain Coordinator

John C. Cowan, who has been deputy director of the U. S. Commodity Stabilization Service at Kansas City, has been named to the newly created post of grain coordinator for Dannen Mills, St. Joseph, Mo. He will be attached to the company's Kansas City office and will be in charge of grain merchandising and storage operations.



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Press Visits Wayne Research Farm

THE AVERAGE grower of soybeans and user of soybean products can have but a faint conception of the vast amount of research and development involved in the conversion of soybeans into finished products. The group of magazine and newspaper editors, radio and TV commentators who assembled at Wayne Research Farm June 30 had an eye-filling day, and a firsthand picture of the

technical operations involved in the conversion of soybeans into finished feed products for livestock and poultry.

The feed manufacturing industry now rates among the top 10 industries in America. How did it get that way? Research, foresight, investment, publicity, all contributed to its growth—but the foundation was proper research.

The Wayne Research Farm, owned by Allied Mills, Inc., is located near Libertyville, Ill. When visiting the Wayne Farm, livestock and poultry farmers are impressed with the fact that here is a "working" farm, not a "showplace" or a "demonstration" farm. Certainly it is neat and well kept; and the various Wayne feeding programs are always in evidence. These serve only as comparisons for hundreds of attempts at improvements, either in terms of production rate, growth rate, feed conversion, or most important of all, lower cost production. If a new "miracle" ingredient does not contribute to lower cost production, it is shelved in favor of more economical production.

The story of Wayne research is a description of many activities, ranging all the way from the inception of a new feeding or management idea to the marketing of the birds or animals used in feeding experiments. Most of these activities take place at the 620-acre Research Farm, under the leadership of J. E. Hunter, vice president and director of research.

As described by Dr. Hunter, the research conducted by his staff of nutritionists, chemists, and livestock

and poultry specialists not only involves practical feeding tests, but delves into the area of the unknown—to such an extent there is a good foundation for the slogan "Building Tomorrow's Feeds Today."

The visitor to Wayne Research Farm sees the whole operation for himself—laboratory testing, feed ingredients, the actual mixing of feeds, feeding practices, and the "true demonstrators"—hogs, dairy and beef cattle, chickens, turkeys, dogs, rabbits, mice!

The soybean has played a major part in Allied Mills' development. It was back in 1925 that the American Milling Co. (merged to form Allied Mills in 1929) converted its equipment to soybean crushing and oil extraction. Soybeans then became a popular crop in the Midwest, especially in Illinois. Up to this time only enough soybeans had been produced annually to supply seed beans for hay crops. It now became evident that Illinois farmers could easily grow increased acreages, if a commercial outlet or market could be secured.

Members of the agronomy department of the University of Illinois, who had been boosting the growing of soybeans, approached H. G. Atwood, president of the American Milling Co., and in 1929 with some close associates he agreed to guarantee a fair price (\$1.50 per bushel) to all commercial growers of soybeans in Illinois for a period of 2 or 3 years. This really started the commercial growing of soybeans in Illinois and the Cornbelt.

This company was a pioneer in encouraging commercial production of the crop, in processing the beans, in promoting the use of soybean meal in livestock and poultry rations, and in making soy flour for human consumption. It now operates a large processing plant at Taylorville, Ill. A new soybean solvent extraction plant, with a capacity of 500 tons of 50% meal daily, is now under construction at Guntersville, Ala., and will be ready for operation early in 1960.

Cargill Refinery Foreman

Wayne D. Rorman, production foreman of Cargill, Inc.'s, Chicago soybean oil refinery, has been named superintendent of the company's Cedar Rapids, Iowa, plant, replacing Frederick A. Brosius, who became Chicago plant superintendent Apr. 1.

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Says India Could Use Whole U. S. Soy Crop

THE UNITED STATES exported almost 100 million bushels of soybeans last year which greatly helped the bean market, David R. Farlow, assistant to the executive vice president of the American Soybean Association, Hudson, Iowa, told the crowd at the first annual soybean days at Sheldon, Iowa, Aug. 7-8.

"If we did not have this export market and we had an extra 100 million bushels of soybeans to market, I'm afraid the market price would not look too good to most of you producers," said Farlow.

The American Soybean Association and our sister organization, the Soybean Council of America, are continually working on market development programs in this country and abroad.

The American Soybean Association started a market development project in Japan in 1956 . . . and we are carrying on market promotion work in many different ways.

The Soybean Council of America has the same type of program in Spain, Italy, West Germany, and Israel, and we are both looking for other countries where we can expand our markets.

"One week from tomorrow I'm leaving for Madras, India, to manage a soybean exhibit at a U. S. Small Industries Fair in cooperation with the U. S. Department of Commerce.

"Here is another potential market that is tremendous. It has been esti-

mated that India alone could absorb our whole soybean crop, and not have enough. Of course there is one big problem—it's common to most of us—they do not have enough dollars to buy with."

"But through market development dollars can be generated for the people of India and other countries to make it possible for them to buy our farm products. The need is there. We must create the desire, and the dollars will be found."

The soybean days were sponsored by the Sheldon Chamber of Commerce and opened on the grounds of the Big 4 Cooperative Processing Association at Sheldon.

Events included a free movie and a soybean products display, parades and shows and the crowning of a soybean queen.



CHEMICAL weed control in soybeans. Fred Slife (left), University agronomist, points out where Amoben, a new pre-emergence chemical, has been applied.

Soybean Work Aired on Illinois Agronomy Day

TWO THOUSAND visitors attended University of Illinois agronomy day at Urbana June 24 to view research work in progress on soybeans and other crops.

D. W. Chamberlain, plant pathologist with the U. S. Regional Soybean Laboratory, showed soybean plots where work was under way to test various soybean strains for disease resistance. He also discussed work with brown stem rot, bacterial blight and bacterial pustule.

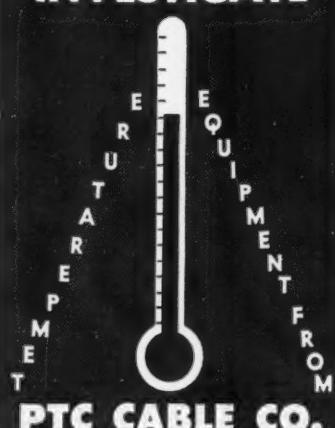
F. W. Slife and R. L. Gantz displayed the plots testing new chemicals for weed control and weed spraying equipment. Their work with granular-type herbicides attracted wide interest.

H. H. Hadley and R. L. Bernard, soybean research workers, reported on work to determine the best soybean row spacing, planting rates and dates. Findings last year indicated many farmers are losing yields by planting soybeans in the usual 40-inch rows. Narrower rows produced higher yields. The study is being continued this year.

Other tour stops included use of gametocides to produce male sterility in alfalfa and soybeans, and alternate planting of corn and soybeans to reduce shading and produce higher yields.

American Oil Chemists Society has scheduled two of the most important events on its 1959 calendar: the 5-day short course on drying oils at the University of Minnesota Aug. 10-14, and the 3-day fall meeting at the Statler-Hilton Hotel, Los Angeles, Sept. 28-30.

INVESTIGATE



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Lime Increases Soybean Yields in Ark.

By C. L. PARKS, C. D. FOY, RICHARD MAPLES, and J. L. KEOGH

(In Arkansas Farm Research)

LIMESTONE applied at rates of 4 and 8 tons per acre 6 weeks before planting has significantly increased soybean yields on an acid loessial terrace soil at Marianna.

The soil was a Richland silt loam with an initial pH of 4.9. Limestone was disced into the soil surface after plowing. Fertilization consisted of 250 pounds of 0-20-20 broadcast prior to planting and 250 pounds of 0-20-20 in the row at planting time.

Lime treatments and yield results for 1958 are shown in the table. Yields reported are averages for four replications. Four and 8 tons of dolomitic and 4 tons of calcitic limestone produced significant yield increases over the no-limestone treatment, but yields for these three treatments did not differ significantly from each other. One- and 2-ton rates of dolomitic limestone showed a tendency to increase

yields, but differences were not significant.

Plants on the no-lime plots showed a marked chlorosis when 2 to 3 feet high. These symptoms were also present to a lesser degree on the 1-ton and 2-ton treatments but not on the 4-ton plots.

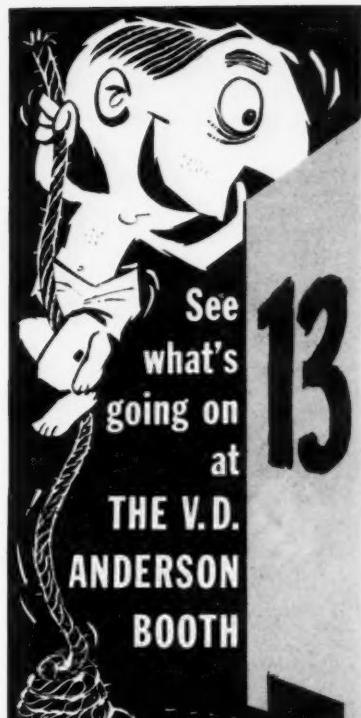
The effects of lime on soil properties have not yet been determined.

This experiment is one of 13 uniform regional lime experiments in Arkansas. It will be continued for at least 5 years, with soybeans grown each year.

SOYBEAN YIELDS ON RICHLAND SILT LOAM, MARIANNA, 1958

Lime rate per acre	Bushels per acre yield ¹
No lime	30.6 ef
1 ton Dol.	33.1 bcdef
2 tons Dol.	33.7 abcdef
4 tons Dol.	36.0 abc
8 tons Dol.	34.6 abcd
4 tons Cal.	37.2 a

¹ Any two yields followed by the same letter are not significantly different at the 5% level by the Duncan Multiple Range Test.



AMERICAN SOYBEAN ASSOCIATION &
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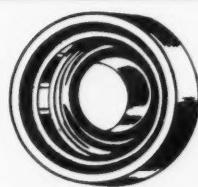
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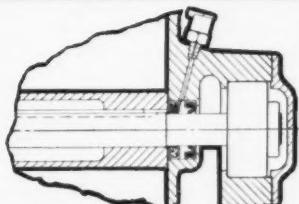


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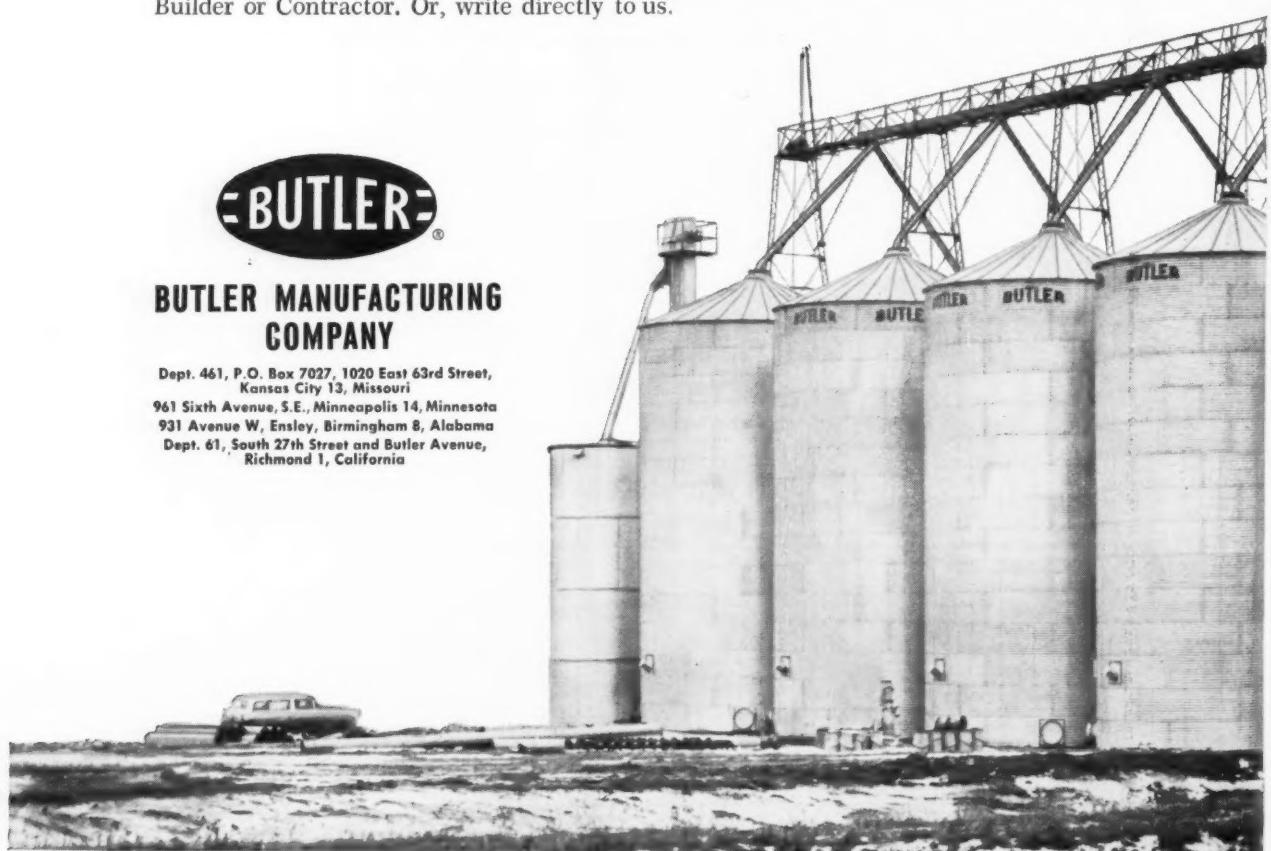
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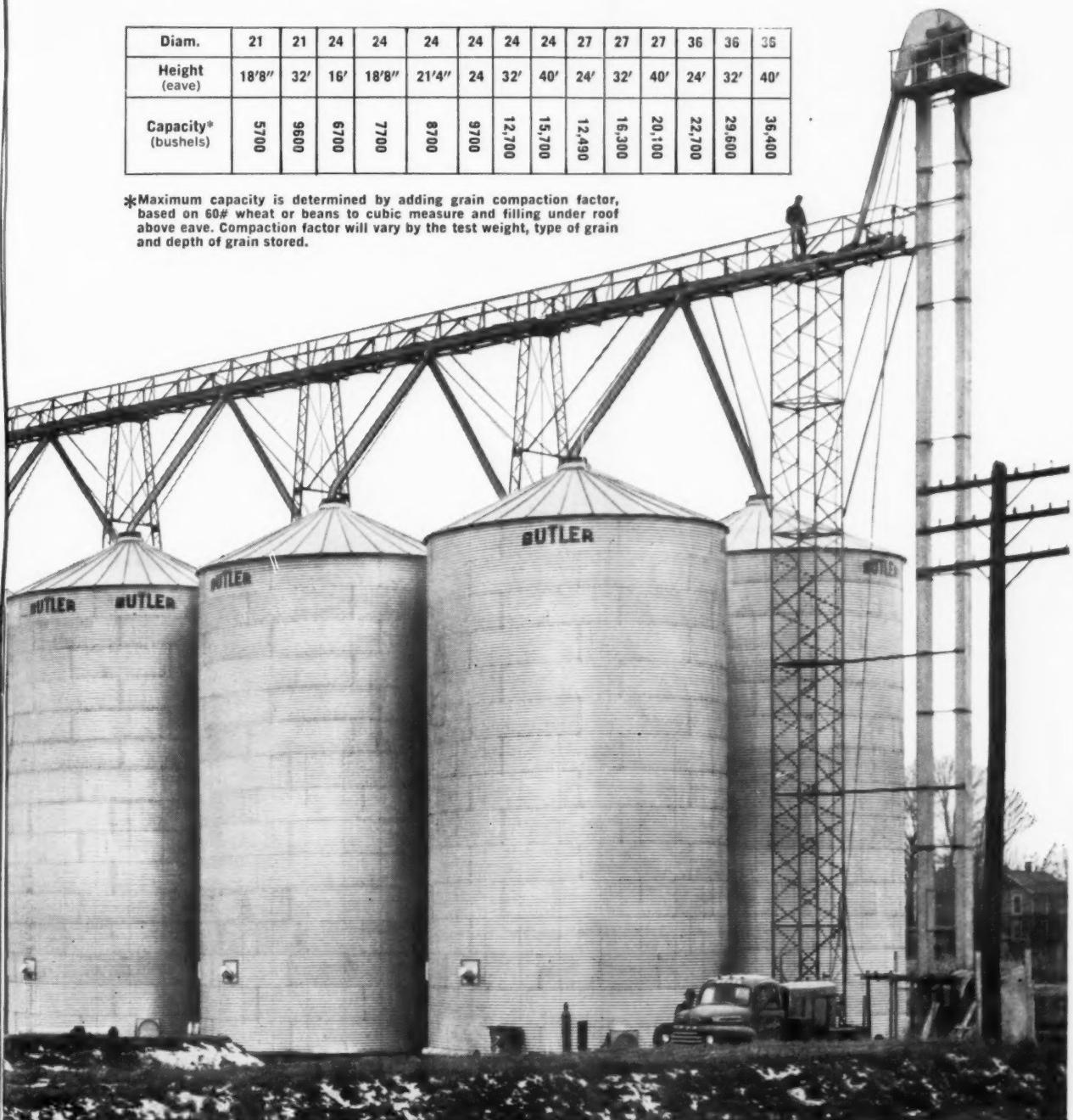


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Capacity* (bushels)	5700	9600	6700	7700	8700	9700	12,700	15,700	12,490	16,300	20,100	22,700	29,600	36,400

*Maximum capacity is determined by adding grain compaction factor, based on 60# wheat or beans to cubic measure and filling under roof above eave. Compaction factor will vary by the test weight, type of grain and depth of grain stored.



PUBLICATIONS

Suggests Increase in Sunflower, Sesame Seed

A MODERATE increase in demand for U. S. food fats and oils is foreseen in the future by L. K. Arnold, professor of chemical engineering, Iowa State University, Ames, because of probable increased U. S. demands from population increases and probable increased export demands due to higher living standards in some foreign countries.

Dr. Arnold says part of the increased demand will be met by increased production of present fats and oils from crops such as soybeans. But he believes another part could well be met by added production of sesame seed in the South and sunflower seed in the North.

He says both of these crops contain very good oils, and the meals resulting from the oil extraction form valuable supplements for soybean meal.

Some increase in castor oil production to replace part of that currently imported is a possibility—especially in view of the probable

increase in demand for nondrying uses.

Increased production of other drying oils such as safflower, linseed or tung does not seem desirable, considering the declining demand for them.

What Possibilities for Oil Crops?
By Lionel K. Arnold. Iowa Farm Science. Vol. 14, No. 1, July 1959, pages 6-290-292.

Lincoln, Wabash Are Resistant to Frogeye

LINCOLN and Wabash varieties have been found resistant to frogeye leafspot in studies by Purdue University and the U. S. Regional Soybean Laboratory.

Gibson, Patoka and Hawkeye are highly susceptible, and Chief and Perry somewhat less susceptible.

Resistant varieties had only occasional spots, and these were usually small and non-sporulating.

Additional Studies of the Inheritance of Resistance to Frog-Eye Leaf Spot of Soybeans. By A. H. Probst and Kirk L. Athow. Phytopathology, August 1958. Vol. 48, No. 8, 414-416.

Row Width Studies by University of Illinois

UNIVERSITY of Illinois agronomy department has been conducting field studies to determine the best row width to use for soybeans.

The 1958 results of the studies show that the 24-inch spacing was consistently better than the other row widths that were used. The same trend has been seen in similar tests conducted for several years.

The average yield difference favoring 24-inch rows over 40-inch rows is usually closer to 2 or 3 bushels rather than to the 5-bushel difference recorded last year.

Soybean Row Spacing and Variety Guide. May 11, 1959. No. 111. Agronomy News, Crops and Soils, University of Illinois, Urbana, Ill.

Kentucky Varieties

Results of the Kentucky Soybean Variety Performance and Fertilizer Tests 1958. By J. F. Freeman, S. H. Phillips and H. R. Richards. Progress Report 77, March 1959. Kentucky Agricultural Experiment Station, University of Kentucky, Lexington, Ky.

FEEDING

Study Feeding Value Of Soybean Hulls

THE INCREASE in production of soybean meal with 50% protein has made soybean hulls available as a mill byproduct feed ingredient. The potential use of hulls in ruminant rations has stimulated interest in the digestibility of the nutrients.

Since the soybean hulls contain 40% to 45% cellulose, the *in vitro* digestibility of cellulose was determined on the hulls and on a number of other milling byproducts and on a sample of dehydrated alfalfa meal for comparison, by Ohio workers.

Digestibility and Feeding Value of Soybean Hulls. By Orville G. Bentley, G. V. Quicke, and A. L. Moxon, Ohio Agricultural Experiment Station. Journal of Animal Science, Vol. 17, No. 4, page 1193.

Improvement on Japanese Soy Brewing. By N. Toyama and M. Kamata. Miyazaki U. Facul. Agr. B. Vol. 3, No. 1-2. March 1958, pages 18-22.

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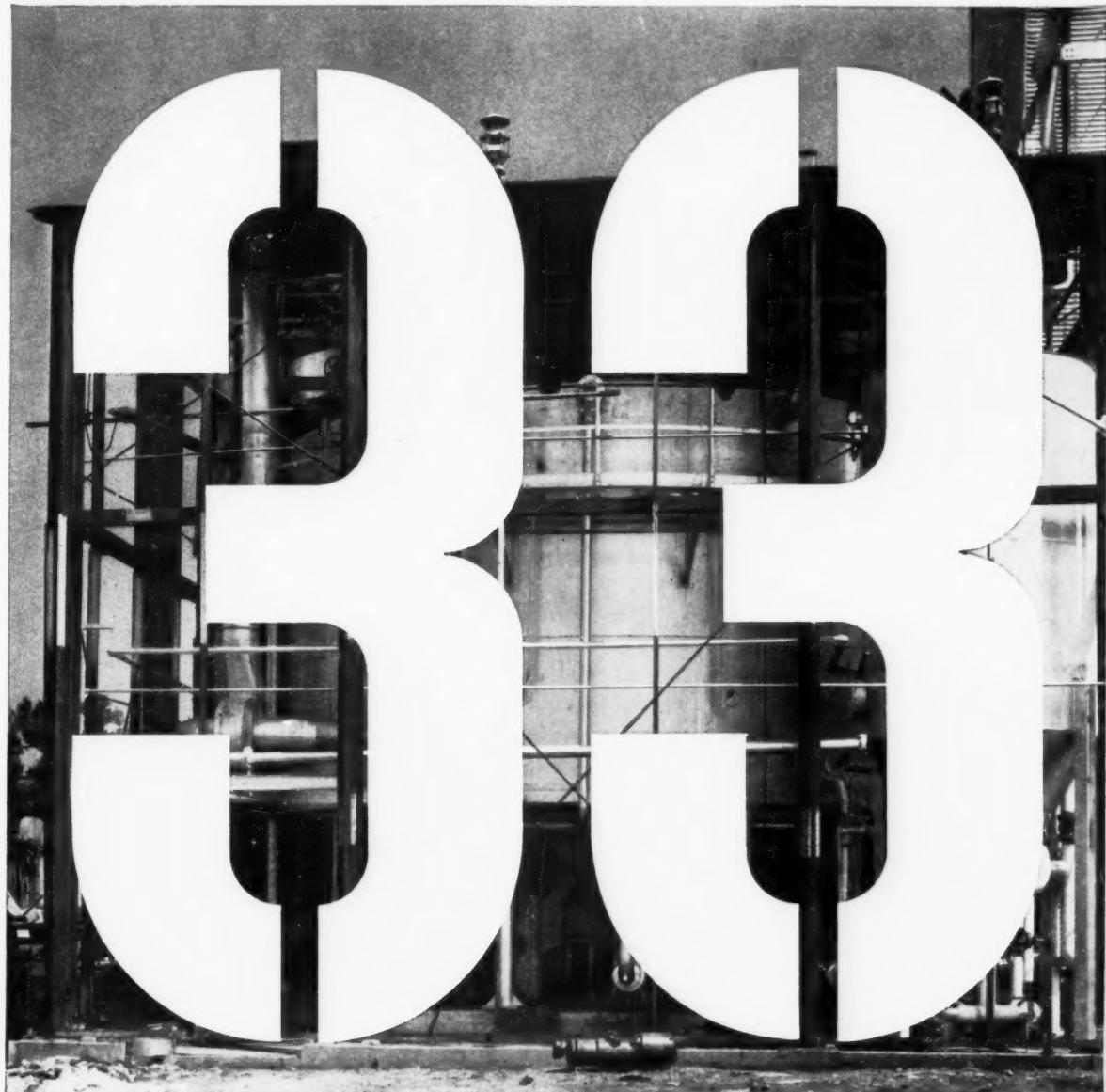
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General Mills, Short to Market Isolated Protein

A JOINT venture agreement for the production and marketing of an isolated soybean protein of unique properties has been announced by the J. R. Short Milling Co. of Chicago and General Mills' oilseeds division of Minneapolis. This announcement was made jointly by Charles H. Bell, president of General Mills, Inc., and J. R. Short, Jr., president of the J. R. Short Milling Co.

Protein is an essential part of the diet. The amino acids which compose protein are the building blocks of the body. Persons of all ages must have a proper intake of protein for growth and maintenance of the human system. Protein supplements are increasingly used in foods to enhance their nutritive value.

"The process for producing this unique pure protein was developed after many years of research,"

Short said. "It is our opinion that our isolated protein has superior qualities that will be of interest to the food industry. We intend to introduce this product to the baking trade as well as other food markets."

This protein, which is both light in color and bland in flavor, will be of particular interest to the baking industry, as it may be used in large concentrations in baked products without materially affecting the physical properties of the finished product. At the same time it can make a significant contribution to the nutritional value of baked foods.

S. D. Andrews, vice president of General Mills and general manager of the oilseeds division, said the agreement is effective at once. "Production on a limited scale will start as soon as possible, and future plans call for a commercial plant at one of the company's soybean plants. General Mills' oilseeds division has soybean plants at Belmond, Iowa, and Rossford, Ohio, which produce soybean flakes, the primary raw material for manufacturing this unique isolated protein. Soybean meal is 44% protein, but this new process developed by the J. R. Short Milling Co. produces a 100% protein."

Improved Processing Aid To Cottonseed Markets

IMPROVED processing techniques developed through nearly 20 years of cooperative research have widened markets for cottonseed meal by extending its use as a high-protein feed for poultry and swine, the U. S. Department of Agriculture reports.

Prior to 1947, use of cottonseed meal for livestock rations was limited largely to cattle because it contained gossypol, a pigment that is toxic to poultry and swine.

Although variable from year to year, the new market for cottonseed meal has been estimated by USDA to have reached 300,000 tons annually in recent years. Largest market for the improved cottonseed meal at the present time is in California where, in 1958, an estimated 200,000 tons went into poultry rations.

Even when fed to laying hens at low, non-toxic levels, gossypol in unimproved cottonseed caused egg yolk discoloration. The improved cottonseed meals, however, can be fed at levels up to 10% of the total diet of hens with no adverse effect on the yolks of eggs produced for the fresh egg market.

USDA's Agricultural Research Service began work early in the 1940's to improve cottonseed meal. Studies of the chemical and physical properties of cottonseed and of the pigment glands containing gossypol gave scientists of the ARS Southern Utilization Research and Development Division, New Orleans, an understanding of the role played by gossypol and laid the groundwork for producing cottonseed meal with a low gossypol content.

Suez Canal Shipments Are Double Year Ago

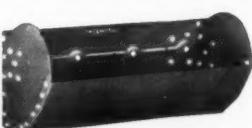
NORTHBOUND shipments of soybeans through the Suez Canal the first 6 months of the current marketing year totaled 14.6 million bushels, more than twice the 6.4 million bushels shipped in October-March of 1957-58, reports the U. S. Department of Agriculture's Foreign Agricultural Service. Shipments were from China-Manchuria.

March 1959 shipments were also above March 1958.

The total 6-month volume of Northbound oilseeds this marketing year was slightly above a year earlier.

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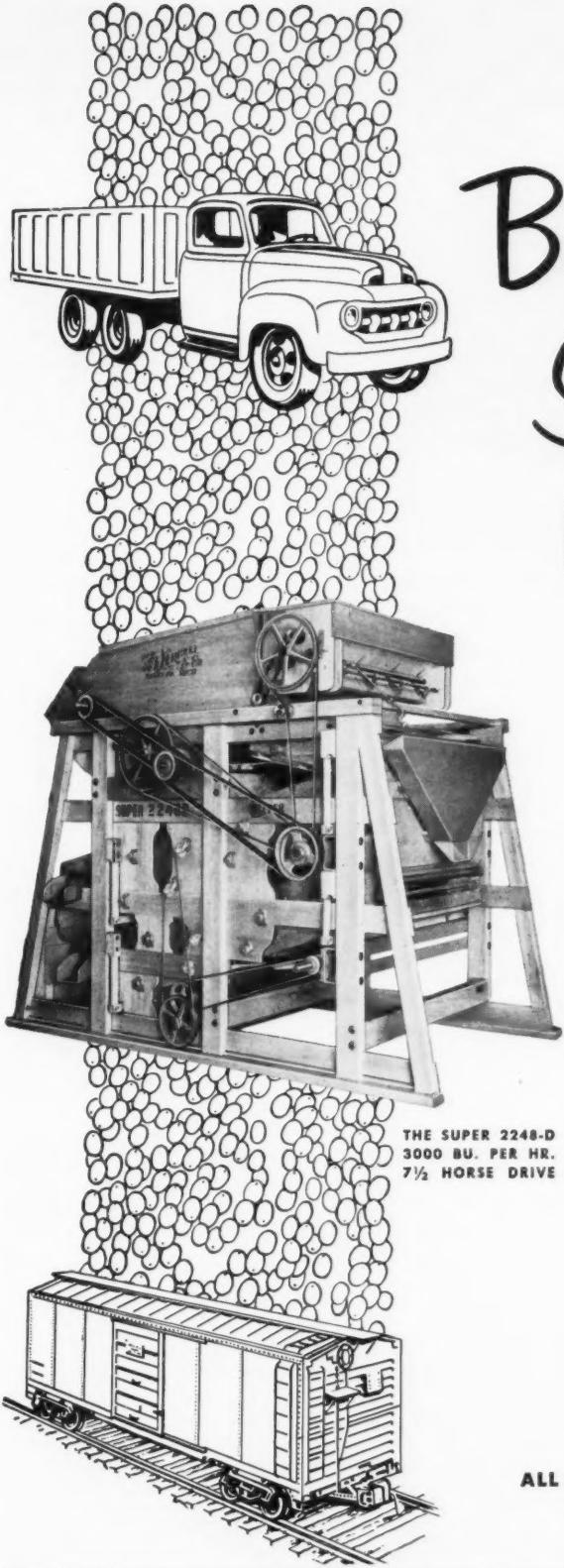
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EXAMINING U. S. soybeans at Trieste fair are, left to right: Paul J. Findlen, assistant agricultural attache, Rome; Harold Koeller, agricultural attache, Belgrade; Oscar Hein, Vienna; Howard L. Roach, Soybean Council president; Robert D. O'Neill, USDA exhibit manager; and Robert D. Harrison, Commodity Credit Corp.

Number of Trade Surveys Under Way

TRADE SURVEYS by the Soybean Council of America, Inc., have been made or are now under way in the Middle East, Far East, North Africa and South America, Howard L. Roach, Council president, told a group from the U. S. Department of Agriculture at Trieste, Italy.

Mr. Roach presided at a meeting with Robert D. Harrison, consultant to the Commodity Credit Corp., and others from USDA at the International Trade Fair at Trieste. They were given a resume of the world-

wide activities of the Council by Roach and other members of the Council staff. Mr. Roach was on his way to Israel at the time.

Javier de Salas, director for Spain, reported large needs for vegetable oils in Spain. Fred Marti, director for Europe, reported on Germany and showed a new German film on the use of soybean meal in mixed feeds. Dominic Marcello, director for Italy, mentioned the large increases in exports of soybeans and meal to Italy in recent years and

SOYBEAN COUNCIL OF AMERICA, INC.

told of the feeding experiments now under way to compare U. S. soybean meal with that from other sources. He was confident the tests will increase the demand for U. S. meal.

Robert G. Houghtlin, president of the National Soybean Processors Association and secretary of the Council, took an active part in the discussions.

Congratulations on the excellent work of the Council were voiced by Mr. Harrison and others of the USDA group, which included Harold Koeller, agricultural attache at Belgrade; Paul Findlen, assistant agricultural attache at Rome; Robert D. O'Neill, manager of the USDA exhibit; Lee H. McElroy, Texas livestock expert at the exhibit; and Ernest G. Moore, USDA public information officer, Washington, D. C.

Story of U. S. Soybeans Was Told at Madrid Fair

THE FOOD and feed value of U. S. soybeans was demonstrated and explained daily to large crowds of Spanish people at the USA pavilion in the International Trade Fair in Madrid, Spain, which closed in late June.

An attractive conveyor belt display, operating in several separate sections, told the story of America's efficient soybean production, the high quality of U. S. soybeans, the food values of soybean oil for hu-



MIXED FEED conference at Rome held by Assalzoo, the organization controlling more than 60% of Italy's local mixed feed production. Left to right, Comm. Piero Borrone, president of Assalzoo, discussing feed problems and soybeans with the Soybean Council's Italian director, Dominic Marcello, Giuseppe Petrini and Dr. Milanesi of Ditta Pezzullo.



HIGH quality of U. S.-produced frozen poultry was explained to visitors at the International Trade Fair in Madrid in May and June. Demonstration is by Prof. J. Robert Smyth, University of Maine, who served as technical consultant at the USA pavilion.

man use, and the importance of soybean meal in modern animal feeding.

The display was placed in the pavilion through the cooperation of the Soybean Council of America, Inc. Javier de Salas, the Spanish director of the Council, and J. Robert Smyth, head of the department of poultry science, University of Maine, served at the pavilion as consultants, to assist in promotion of the Spanish market for these products.

The display explained that Spain's own production of vegetable oils is inadequate, and that soybean oil is providing an adequate and economical supplement to Spain's oil supplies. The exhibit also stressed the use of soybean oil meal as an economical feed for chickens and other farm animals.

The United States' participation in the Madrid fair was part of the program of Foreign Agricultural Service, U. S. Department of Agriculture, to promote and expand foreign markets for the agricultural abundance of America.

South American Countries In New Market Agreement

CHILE, Colombia, Ecuador and Peru are included in a new market development agreement recently signed between USDA's Foreign Agricultural Service and the Soybean Council of America, Inc. The agreement extends until Dec. 31, 1960, and provides for exchange and visitation programs of competent U. S. technicians and representatives.

Purpose: To increase the market for U. S. soybeans, soybean oil and soybean meal with our neighbors to the south.

* * *

Howard L. Roach, Council president, was in Tel Aviv, Israel, in July to activate the market development program recently signed there. He traveled on to Istanbul, Turkey, to confer with trade and government officials and then to Athens, Greece, for conferences with government people to prepare for the American Farm School at the Salonika Fair Sept. 1-22.

Also on the itinerary were progress checks on the German market development project at Bonn and Hamburg, Germany, and conferences in London with the United Kingdom Oilseed Crushers. Mr. Roach is returning to this country just ahead of the American Soybean Association convention in St. Louis.

David R. Farlow, assistant to the Council's executive director, Geo. M. Strayer, will leave immediately after the American Soybean Association convention in St. Louis Aug. 11-12 to take charge of the soybean exhibit at the U. S. Small Industries Fair, Madras, India, Sept. 1-30. The exhibit will show the value of soybean oil and protein in the diet as a possible answer to India's continuing food problem.

Informative lectures and conferences will be held for trade groups, nutritionists, government officials and others. Toasted soy grits will be dispensed to important visitors and their nutritional values explained.

This is a repeat of the highly successful fairs at New Delhi and Calcutta earlier this year.

AMERICAN SOYBEAN ASSOCIATION

Would Continue 480 For 5-Year Period

THE AMERICAN Soybean Association favors the continuation of Public Law 480 for a period longer than 1 or 2 years, and preferably as long as 5 years, Ersel Walley, chairman of the ASA market development committee, told the U. S. Senate subcommittee on the Food for Peace bill.

Walley testified before the subcommittee of the Senate Foreign Relations committee in Washington, D. C., early in July.

Walley said ASA "favors continued and more aggressive efforts designed to develop foreign markets for American farm products in general and soybeans and soybean products in particular."

"The experience of the American Soybean Association in making surveys of potential markets for American farm products abroad and in conducting foreign market projects has convinced the Association that American farm products not needed for domestic consumption can be a potent force for the preservation of freedom and peace in the world.

"It is roughly estimated that 1.2 billion people living outside the Iron and Bamboo curtains have an average per person per day calorie intake of not over 2,000 calories. For the most part, the diet of these peoples is high in starch and low in proteins and fats. . . Supplying the needs of only a small percentage of these peoples would require more food than any annual surplus production we

have yet experienced from American farms.

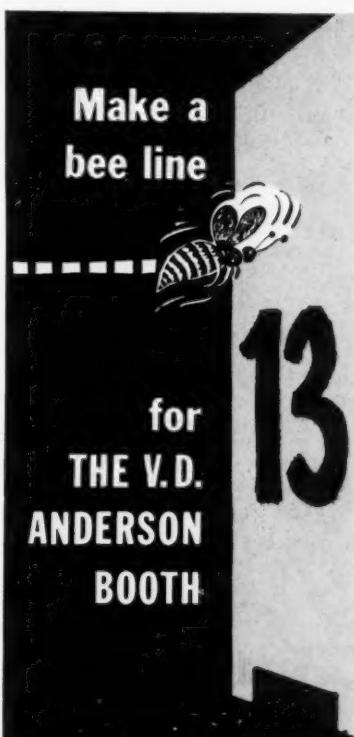
"The cost of carrying surplus farm products including storage and interest on investments has, for several years, exceeded \$2 million per day. . . We feel that from the standpoint of the American taxpayer the continuation and expansion of the P. L. 480 program is important.

"We do not believe it is too visionary or unrealistic to reason that where there is a need for food, there is an opportunity for American agriculture.

"We believe that the extension of P. L. 480 and the programs provided for thereunder effectively administered, is essential in the present situation in which American agriculture finds itself."

Central Soya Managers

The appointment of new plant managers at the company's Indianapolis, Ind., and Harrisburg, Pa., plants was recently announced by Central Soya Co., Inc. Robert E. Syster, previously plant manager at Harrisburg, has been named plant manager at Indianapolis. John Ebersole, assistant plant manager at Gibson City, Ill., has been appointed plant manager at Harrisburg.



JAPANESE-AMERICAN SOYBEAN INSTITUTE

Japanese Users React to U.S. Beans

By SHIZUKA HAYASHI

Managing Director, Japanese American Soybean Institute, Nikkatsu International Bldg., No. 1, 1-Chome Yurakucho, Chiyoda-Ku, Tokyo, Japan

THE FACT THAT soybeans in Japan are used 100% as food should by now be well realized by those in the soybean industry as well as by the growers. It has been repeatedly emphasized that soybean trade between the United States and Japan is to be based on a complete understanding of this fact.

The Japanese American Soybean Institute has entered into its 4th year of operation. One of the initial works of the Institute was to find out the causes of the unpopularity of U. S. soybeans among the Japanese users, especially the manufacturers of soybean products. A great deal of investigation therefore has been made in this direction. With the exception of those relating to the technical phases of soybeans, investigations carried out by the Institute have revealed that the major complaints by the Japanese users are more or less concentrated in problems concerning the general quality of the U. S. soybean, such as foreign material, broken beans, irregularity of sizes and mixture of different varieties of soybeans received. All these problems have been time

and again called to the attention of interested parties in the United States. Through the cooperation of all concerned it is gratifying that considerable improvement has been made in this connection. The percentage of foreign material is getting less and less. But there is still something to be done on the quality problem.

Samples of certain varieties have been shipped from the States to the miso and tofu people for experimental purposes. This experiment is progressing satisfactorily but is still in a stage that requires more time for completion. The writer believes in the very near future specific varieties can be chosen for different food manufacturers and business will be done on the basis of specific varieties.

At the request of Japanese Food Agency, Ministry of Agriculture information has been collected from the different users of U. S. soybeans concerning complaints as well as desires. The following are opinions expressed.

By oil processors:

1—Shape of beans should be as round as possible.

2—Beans with black hilum to be avoided.

3—Beans should be yellow on the surface as well as cotyledon.

4—Percentage of moisture allowance provided in the official standard should be lowered by 1% for each grade.

5—Old crop beans and new crop beans should not be mixed together.

6—Foreign material, especially seeds of other plants, sand and stones should be taken off.

7—Trade terms should be revised to do business on a "pure basis."

By miso manufacturers:

1—Soybeans with white hilum with rich protein content and of big size are preferred.

2—Soybeans should be stored separately by varieties.

3—Foreign material, especially seeds of other plants, sand and stones should be eliminated.

By shoyu producers:

1—Measures should be taken to enable purchase of varieties with rich protein content.

2—Foreign material, especially seeds of other plants and stones should be taken out but inclusion of split beans, pods and stems may be allowed with reduction in price.



TASTING miso made by Dorman, Mamloxi and Jackson varieties of U. S. soybeans at the Inamari miso factory in Shizuoka City. Arthur Rollefson, U. S. assistant agricultural attache, and Mr. Hayashi.

3—Soybeans with vermin should be completely fumigated before shipment.

By tofu producers:

1—Soybeans should be rich in protein content with thin seedcoat.

2—Soybeans should be free from foreign material, especially that of poisonous seeds of other plants.

By frozen tofu producers:

1—Foreign material and split beans should be reduced.

By kinako producers:

1—Foreign material should be eliminated.

2—Soybeans should be yellow in color both the surface of seedcoat and cotyledon.

3—Soybeans should be round and uniform in size.

By natto producers:

1—Soybeans of small size similar to that of Tokachi soybeans produced in Hokkaido preferred (about 17 grams per 100 seeds).

2—Surface and cotyledon should be yellow.

3—Soybeans should be free from foreign material.

4—Soybeans with lighter hilum produce better products than with black hilum.

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CROP REPORT

Rapid Progress of Soybean Crop in July

THE 1959 U. S. planted soybean acreage was estimated at 22,917,000 as of July 1 by the U. S. Department of Agriculture. This is 2 million below the 1958 planted acreage and below the March intentions figure.

Acreage for harvest was estimated at 21,968,000 compared with 23,752,000 in 1958.

Earlier, du Pont-Galvin estimated 23.1 million acres and the National Soybean Crop Improvement Council 22.6 million acres for harvest.

Deepest cuts acreagewise are in Minnesota and Iowa, with acreage also being cut in Ohio, Indiana, Illinois, and Kansas. Soybean acreage is being increased in most Southern States, with the greatest gain in Arkansas, which now stands in third place in the nation—behind Illinois and Iowa—in total acreage devoted to soybeans.

In late July soybeans were progressing rapidly, with development generally ahead of average in the main producing belt. A large part of the crop was blooming or podding.

But rainfall was spotted over a considerable part of the belt and there was growing concern that dry weather may cut the crop.

Reports from Soybean Digest crop correspondents and others follow:

Alabama. E. E. Purvis, Baldwin Oil Mill, Foley (7-20): Some late planting, but making excellent progress with plenty of rain. Early plantings clean, late need cultivating.

Arkansas. Weekly Weather and Crop Bulletin (7-20): Soybean prospects continue good, although rain is needed in many localities. Irrigation of soybeans was stepped up during the week. Fields are clean and in a good state of cultivation.

Illinois. C. R. Acord, Kansas (7-18): Crop condition good considering moisture. Temperature slightly below normal. Moisture considerably below. Yield outlook 25% below last year but about 10-year average.

Indiana. Chester B. Biddle, Remington (7-20): Drought has hurt. Beans short and not too good. Yield will be down. Amount depends on moisture from now on. Some disease. Root rot showing up.

Iowa. Glenn Pogeler, North Iowa Cooperative Processing Association, Mason City (7-21): We have the best crop prospects we have ever had.

Maturity about a week ahead of normal. Condition 110% of normal. Soil a little dry on surface, subsoil okay. Yield outlook 25 bushels or better.

Kansas. Soy-Rich Products, Inc., Wichita (7-20): Maturity a little ahead of normal. Some fields ready to bloom. Fields look nice. Weather

has been mild. Rainfall has come at right time. Weed control for most part good. Yield could exceed last year.

Louisiana. Walter M. Scott, Jr., Tallulah (7-20): 85% of crop laid by. Frequent rain. 15% more advanced than normal. Condition good. Frequent rains and high labor contribute



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SOYBEAN CROP PRODUCTION, JULY 1959 (1,000 ACRES)

	Acreage grown alone for all purposes			Equivalent solid ¹			Acreage for beans		
	Average 1948-57			Average 1948-57			Harvested 1948-57		
	1958	1959	Average 1948-57	1958	1959	Average 1948-57	1958	1959	
N. Y.	8	7	8	8	7	8	6	6	6
N. J.	41	50	47	41	50	47	29	45	41
Pa.	49	46	40	49	46	40	22	15	14
Ohio	1,134	1,475	1,446	1,134	1,475	1,446	1,098	1,441	1,423
Ind.	1,889	2,297	2,228	1,889	2,297	2,228	1,804	2,205	2,183
Ill.	4,106	5,079	4,825	4,106	5,079	4,825	3,996	5,013	4,777
Mich.	137	280	224	137	280	224	128	265	215
Wis.	74	132	98	74	132	98	55	120	88
Minn.	1,628	3,129	2,222	1,628	3,129	2,222	1,575	3,082	2,184
Iowa	1,964	3,100	2,387	1,964	3,100	2,387	1,932	3,085	2,373
Mo.	1,584	2,294	2,317	1,599	2,294	2,317	1,510	2,132	2,200
N. Dak.	69	285	228	69	285	228	65	272	223
S. Dak.	123	266	149	123	266	149	119	259	142
Nebr.	106	210	136	106	210	136	101	206	132
Kans.	412	434	456	412	434	456	355	421	410
Del.	93	167	172	93	167	172	86	161	167
Md.	134	210	212	134	210	212	114	193	200
Va.	226	289	295	252	306	310	182	269	277
W. Va.	10	7	6	10	7	6	.....	.....	.....
N. C.	420	524	540	482	555	575	315	444	477
S. C.	174	389	412	215	427	450	142	362	391
Ga.	89	115	109	117	148	142	45	90	82
Fla.	2 ² 25	48	48	2 ² 25	48	48	2 ² 21	46	46
Ky.	206	220	189	213	220	189	126	158	140
Tenn.	298	366	366	348	384	384	196	276	290
Ala.	147	179	179	149	179	179	85	132	143
Miss.	561	938	994	591	952	1,007	433	800	864
Ark.	919	2,078	2,244	965	2,093	2,258	848	2,026	2,213
La.	123	170	185	234	237	249	66	130	138
Oklahoma	65	54	72	65	54	72	40	45	54
Texas	10	62	83	10	62	83	5	53	75
U. S.	16,822	24,900	22,917	17,240	25,133	23,147	15,499	23,752	21,968

¹ Acres grown alone, plus one-half the interplanted acres. ² Short-time average. Crop reporting board, AMS, USDA.

to weeds and grass. Yield outlook good to excellent.

Minnesota. Henry Leitschuh, Sleepy Eye (7-20): Bean acreage originally was down but due to aphids in small grain which was plowed down soybeans increased to about same as last year, possibly 5% less. Maturity a week to 10 days ahead of normal. Yield outlook at least as good as normal. More fields

are cleared of corn than last year.

John W. Evans, Montevideo (7-20): One-third shrink in acres. Crop condition good—with some variations. Enough dry weather to affect yield, although we have many good looking fields. Very few late planted fields this year. Cleaner of weeds than usual.

Mississippi. W. T. McKinney, An-guilla (7-18): Today's 30-day weather

forecast for area of above normal rainfall practically assures good bean crop. All beans except those following small grain are beginning to bloom. All fields are cleaner than we ordinarily have.

Missouri. O. H. Acom, Wardell (7-18): Best looking bean and cotton crop we have had for a good many years. Just enough rain at right time. Talk of 40 bushels per acre. Fields practically free of weeds. A good deal of spraying has been done.

North Carolina. H. V. Latham, Latham Seed & Equipment Co., Inc., Belhaven (7-18): Wet. 18 inches of rain since July 1. So far no excessive damage. Some fields have been so wet cultivation has been impossible since July 1. Weeds will cause some abandoned acreage.

Ohio. M. G. Stoller, Stollers Seed House, Paulding (7-18): About 10% increase in acres but 20% of beans in Paulding and Defiance counties were planted in dry ground and stands poor. We are having scattered showers but need more in most sections. Yield outlook about average with more late beans than last year. Very few old beans left to sell.

South Carolina. H. W. Perrow, Cameron (7-18): Too much moisture. Plenty of grass and weeds. Need good weather to work crop out.

Virginia. Louis Groh, Louis Groh & Son, Inc., Clay Bank (7-18): Crop condition very good. Weather and moisture conditions very good. Yield outlook about same as last year. Weed situation not bad.

Soybean Stands in Iowa Under Average

ON JULY 8 and 9 J. M. Dunleavy, plant pathologist, and C. R. Weber, agronomist of Iowa State University, Ames, made an 835-mile soybean survey in all quarters of Iowa except part of the southwestern quarter. Sixty-one fields were observed.

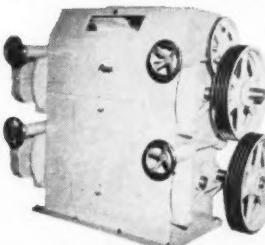
Stands of beans were a little less than average due to drought in June, Dunleavy and Weber reported. This condition caused unevenness of growth in many fields and will cause some yield loss.

Northeastern quarter, east and southern portions were most retarded as to development of beans and had most weeds present. Volunteer corn was not as prevalent in soybean fields as in 1958.

Fusarium root rot was the most frequently observed disease, being found in 43% of the fields visited. Aside from Fusarium root rot fields were remarkably disease-free and 28% showed no trace of disease.

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ADM Accents Marketing In Organization Plant



T. L. Daniels



J. H. Daniels

A new form of corporate organization that stresses marketing went into effect July 1 for **Archer-Daniels-Midland Co.**

John H. Daniels, ADM president who announced the change, said the company's present 12 operating divisions and two operating departments will be placed in four major groups, each headed by an executive reporting directly to the president.

Within these—agricultural products, chemical products, specialty products, and international—ADM's more than 1,000 standard products and its foreign operations will be

grouped according to the markets they serve.

The board of directors designated three executive vice presidents to head up the three domestic groups.

Erwin A. Olson, administrative vice president since 1956, was named executive vice president-agricultural products. Walter G. Andrews, former vice president and manager of the resin and plastics division, was elected executive vice president-chemical products group. Richard G. Brierly, an executive vice president since last November, was appointed executive vice president-specialty products group.

The directors also named Burton W. Schroeder, former vice president and manager of the chemical products division, to be administrative vice president of ADM.

A new executive committee composed of Thomas L. Daniels, chairman of the board, John Daniels, Olson, Andrews, Brierley, and Schroeder was elected at the same time. All of the new members are directors of the company.

Under the new organization, ADM's formula feed, dehydrated alfalfa, linseed and soybean meals, country elevators, flour, grain, and Mexican feed operations will comprise the agricultural products group.

In the chemical products group will be the linseed and soybean oils, vinyl plasticizers, resins, plastics, chemical products, and Glass Plastics Supply Corp., an ADM subsidiary.

The specialty products group will include foundry products, industrial cereals, isolated soy proteins, soy flours, flax fibre, bulk storage and handling equipment for feed and chemical plants produced by the equipment department, and ADM Canada Ltd., the company's Canadian subsidiary.

The international division will supervise the company's export sales, fats and oil trading, and foreign chemical plants.

Retirement of Albert C. Hoehne from his positions as a vice president and director, effective Aug. 1, was announced after the directors' meeting.

Hoehne, associated with the oilseed industry since 1922, has been manager of ADM's soybean division since 1955. Hoehne was named to the ADM executive committee in 1949. He is a member of the market development and merchandising committees of the Soybean Council of America.

Ralston Purina Elects Three Vice Presidents



Donald B. Walker



C. Alvin Tolin, Jr.

Three new vice presidents of **Ralston Purina Co.** have been elected by the board of directors, it has been announced by Donald Danforth, chairman of the board.

They are John McGinty, vice president and director of sales; C. Alvin Tolin, Jr., vice president and general manager of chow and soybean production; and Donald B. Walker, vice president and director of the soybean division. All were elected also to the company's management committee.

McGinty has been with the company 15 years, Tolin 33, and Walker 24.

Some Changes Announced By Central Soya Co.

Some recent changes announced by **Central Soya Co.**:

The retirement of William G. "Bill" Haug, soybean and grain buyer at the Indianapolis, Ind., board of trade office, after a grain business career that began half a century ago. He entered the grain business as a buyer for a Louisville, Ky., wholesale grain house in 1909.

The transfer of John Wicklund to the chemurgy division special products sales force in Chicago, Ill. He has been manager of meal sales for both the Chicago and Indianapolis plants. He joined the chemurgy division in 1946.

The promotion of John Lemancik to sales manager, soy flour, in the chemurgy division at Chicago. He has been handling technical sales and service on soy flours and carrier products.

The promotion of Robert W. Odle to plant manager of the Des Moines, Iowa, plant. He and his family will move to Des Moines from Decatur, Ill.

The promotion of Raymond Molck to assistant feed mill superintendent at the Memphis, Tenn., plant.

The promotion of Earl Edmonds to

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13

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feed mill supervisor at the Gibson City, Ill., plant.

Dawson, Minn., Firm Expands Facilities

Tri-County Co-op Soybean Association, Dawson, Minn., is expanding and modernizing its solvent extraction soybean processing facilities. Davidson-Kennedy Associates Co., Chicago Heights, Ill., is supplying design, engineering, equipment and construction assistance.

The new process installation, in addition to having more than double Tri-County's present processing capacity, will increase the operating efficiency considerably and produce improved products to the benefit of their customers. Special solvent recovery equipment will eliminate the possibility of any impairment of oil quality during processing. Meal will be processed in equipment which is noted for the superior type of soybean oil meal which it produces. Special features have been incorporated by D-K-A which result in operating efficiencies, and fuel conservation and cooling water.

D-K-A reports that the new facilities will be ready for operation on the new soybean crop. Meanwhile, in order that Tri-County can continue to serve their customers without interruption the work has been planned and is being carried out so that there is practically no interruption in the present operation.

Staley Co. Increases Bulk Feed Facilities

A. E. Staley Manufacturing Co., Decatur, Ill., plans two major construction projects to increase facilities for the handling of bulk feeds, according to E. E. Rhodes, manager of the company's soybean division.

The two projects, one at Decatur and the other at Jasper, Ind., will add nearly 400 tons of feed storage capacity for faster bulk delivery by the Staley Co.

Four 20-ton holding bins for finished feeds will be erected on the Staley plant site at Decatur. The second project, erection of a bulk feed warehouse and delivery plant in Jasper, Ind., is to serve Staley customers and dealers in southern Indiana and northern Kentucky.

Appointment of Robert W. Golden, S. Douglas Young and Guy E. LeFever as district sales managers has

been announced by T. L. Mitchell, manager of Staley formula feed sales. Golden has most of the state of Illinois; Young has Indiana; and LeFever will cover northern Illinois and Wisconsin.

A new 96-ton-capacity bulk feed distribution center has been opened at Charles City, Iowa, by **Nutrena Mills, Inc.**

Thomas C. Veben, vegetable oil merchant in **Cargill, Inc.**'s Fort Dodge, Iowa, office, has been named account manager in charge of merchandising activities at the firm's soon-to-be-completed Norfolk, Va., soybean processing plant.

The Checkerboard Soybean Co., which for many years has operated as a subsidiary of the **Ralston Purina Co.**, has been dissolved and it has become a part of the parent company, according to an announcement by L. B. Stuart, Purina executive vice president. The change will have no effect on personnel.

Ray Elder has been appointed product engineer for square bolted steel tanks at **Butler Manufacturing Co.**, Kansas City, Mo. He will provide technical information to Butler bolted tank contractors and custom-

ers on the structural variations practical for different types of square tank installations.

Riechman Crosby Hays Co., Memphis, Tenn., announces its second industrial show to be held at its offices Mar. 4-5-6. About 80 manufacturers' lines will be exhibited. Fleix Tanner will be in charge. The first show was held last February.

Lewis Supply Co., Memphis, Tenn., has been appointed a distributor for Westinghouse unit type and the Le Rosi S 2 line of stationary air compressors.

Keith Voigt, manager of the Farmers Cooperative Elevator Co., Iowa Falls, Iowa, has been named manager of the **Boone Valley Cooperative Processing Association** at Eagle Grove. He succeeds Ed Olson, who has served as manager since 1942.

James Willis has been promoted to the newly created post of director of advertising and sales promotion for **Spencer Kellogg & Sons, Inc.** He has been engaged in vegetable oil sales work in the New York district sales office for the past 4 years. He moved to Buffalo to assume his new duties in early July.

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WASHINGTON DIGEST

Sees 1960 30-Million Bu. Carryover

INFORMALLY, Department of Agriculture officials are thinking in terms of a 525-million-bushel soybean crop this year based on the estimate of acres for harvest of 21,968,000, and an average yield slightly over 23 bushels. This is a tentative estimate made ahead of the official August crop report.

Carryover stocks of 60 million bushels are forecast as of this time in USDA. This would make a total supply of 585 million bushels if the estimates are substantially correct.

Preliminary estimates of use during the 1959-60 marketing years are: A crush of 400 million bushels. Seed and feed 30 million bushels. Export as beans from 120 to 125 million bushels. Total use 550 to 555 million bushels. Carryover projected into 1960, 30 to 35 million bushels.

A substantial boost in export as beans is forecast for the coming year if the beans are available. This is based on the fact that copra production is still low, Communist China

is still having production troubles, and stocks of beans and oil in Europe are lower than they have been.

There is some internal debate about a crush of 400 million bushels. Oil people in USDA doubt if that much will be needed. An increase of around 20% in cottonseed oil is considered probable. There may be around 10% more lard.

It is argued on the other hand that a crush of 400 million bushels will be required to maintain the protein feeding rate. Around 9.5 million tons will be required for this and other uses.

The outlook as it is viewed here just ahead of the first official crop report is generally favorable, and indicates that the industry will be in a good stocks position in another year.

Bean's Proposal

Louis H. Bean, an economic consultant who was economic adviser to the secretary of agriculture until 1953 has proposed in testimony be-



By PORTER M. HEDGE
Washington Correspondent for
The Soybean Digest

fore the House agriculture committee that corn acreage be diverted to soybeans.

He suggests this as a way to reduce the corn surplus and cost of carrying it to taxpayers, to reduce the total feed supply without idling land, to provide needed protein for an expanding livestock industry, and oil for "a vast unfulfilled need abroad."

Bean says since the peak war years of 1943-44 there has been a down trend in corn acres of around 14 million. This has been offset by a 13 million acre expansion in soybeans. Total acreage of the two crops, Bean says, remained fairly stable between 94 and 98 million for the entire period from 1945 to 1958. The average was about 96 million acres of beans and corn.

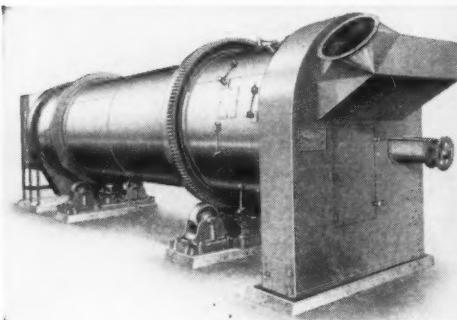
"The 1959 contrary-to-trend expansion in corn of about 11 million acres produced a contrary-to-trend decline in soybean acreage of 3 to 4 million acres. Instead of a combined acreage of 96 million in the two crops, we now have 106-10 million corn acres too many for 1959 and about 12-15 million too many in terms of the normal trend in corn acreage projected 3 years hence."

Bean says the long term program of Cornbelt acreage adjustment should aim from here on out at less corn and more soybeans, not only to correct the distortion in 1959 corn acres, but to restore a more nearly normal relation of feed stocks to demand.

He pointed out that an acre of soybeans produces a ton less feed than that produced by an acre of corn. Corn produces about 3,080 pounds of carbohydrate feed; soybeans 1,080 pounds of protein feed plus oil.

Bean recommends diverting 5 million corn acres to soybeans for each of the next 3 years. He argued that if you could assume holding other feed grain production at the indicated lower 1959 volume, such a di-

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version would reduce feed grain stocks from more than 70 million tons to less than 30 million tons in a 3-year period.

Extension of P. L. 480

The Senate agriculture committee has recommended a 1-year extension of the Public Law 480 program in substantially the form it has now, with the exception of greater emphasis on market development work.

The proposal would authorize use of \$1.5 billion in U. S. farm "surpluses" under title I of the bill which permits taking of foreign currencies in exchange for U. S. foods.

Market development was given special attention in the committee debate. An amendment was proposed to make surpluses available to countries whose currencies have changed from "soft" to "hard" and to obtain local currencies specifically for market development work if necessary. The object was to make sure this type of work could be continued, even though a country might not be eligible later on to use its currencies for purchase of U. S. food products. Originally the 480 program was intended primarily for "soft currency" countries. In some of these currency stabilization has reached the point at which they may not be eligible.

The committee intent is to keep market development work going. The proposed amendment was discussed but finally laid aside. Instead, the committee insisted that the convertibility of currencies be continued.

Oil Exports

Though not official, USDA is shading its estimate of edible oil exports a little for the marketing year ending Oct. 1. There were signs earlier in the year that as much as 1.5 billion pounds of cottonseed and soybean oils could be shipped this season, under both the P. L. 480 programs, through International Cooperation Administration program, and by commercial sales.

The estimate is now trimmed to something more than 1.4 billion pounds in total.

Shipments totaling about 125 million pounds are to be carried over into the new marketing year. These include in the neighborhood of 100 million pounds cottonseed oil for Argentina, 11 million pounds cottonseed oil for Pakistan, and 15 million pounds soybean oil for Poland. There was some question whether the full Spanish 480 program would be carried out this marketing year. Some of the oil currently scheduled under 480 to Spain is expected to be reprogrammed for 1959-60.

- MARKET STREET -

We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate 10c per word per issue. Minimum insertion \$2.00.

FOR SALE — 24-INCH BOXCAR loader, Stephen-Adamson, complete with 3 hp single-phase motor mounted on wheels, used, \$750. One Link-Belt power shovel, complete with sheaves and swivel, less motor, \$300. Call or write Wonder State Manufacturing Co., Paragould, Ark.

MUNCY 1½ AND 2-TON HORIZONTAL and vertical mixers in stock, quick shipments. Hughesville Machine & Tool Co., Hughesville, Pa.

WANTED—SOLVENT SALESMAN, chemical degree or equivalent, to sell petroleum solvents to agricultural and paint industry in the Midwest. Soybean Digest, Box 319-B, Hudson, Iowa.

GRINDERS, MIXERS, ROLLS, screens, 15 h.p. air lift, bucket elevators, Buflovak steam dryer, Anderson superduo Expeller, California pellet hyflo. Ask for list. Commercial Machinery Co., 225 Main St., San Francisco, Calif.

GRAIN STORAGE BINS WHOLE-SALE only—dealer cost as low as 14¢ bushel f.o.b. Kansas City. Freight equalized with Birmingham, Ala., in carload lots. Sizes: 1,000 bu. up to 36,000 bu. In-storage aerating systems available if desired. Black, Sivalls & Bryson "Perfection" distributor for Alabama, Georgia, Tennessee, North and South Carolina. For details write, wire or call collect Harry J. Whelchel Co., 1218 E. Main St., Chattanooga, Tenn.

GRAIN STORAGE—LARGE CAPACITY grain tanks, steel buildings grain handling equipment, dryers, bolted steel tanks. Engineering. Complete installation. For further information write W. B. Young Co., Marshall, Mo.

FOR SALE: USED ASPIRATOR for Hart-Carter Model 2133 in excellent condition. Martin Grain Co., Ph. 4311, Shaw, Miss.

USED HAMMERMILLS, MIXERS, pellet and roller mills—any excess equipment. Highest cash prices paid. Free listing for any old equipment with our buyers exchange. Will sell on brokerage basis or cash. Write: James Equipment Co., Box 460, Fort Dodge, Iowa.

FOR SALE—ONE EUREKA NO. 7 grain cleaner, good condition, complete with soybean screens. Price \$750. Funk Bros. Seed Co., P.O. Box 911, Bloomington, Ill.

FOR SALE—MISSISSIPPI REGISTERED and certified Midsouth oats. High yielder, resistance to Victoria blight, cold survival. Very early maturing, can plant soybeans after harvest. Limited supply, order early. Bard Selden, Tunica, Miss.

FOR SALE—BLEDSOE WHEAT, Mississippi registered seed only. Very early, follow with soybeans. Resistant to mildew, rust. Soft wheat, suitable for family-type flour. High yielder, 50 bu. plus. Bard Selden, Tunica, Miss.

FOR SALE—MISSISSIPPI REGISTERED and certified Lee and Hood soybean seed. Order early. Will treat, clean, bag, store, insure, with rat and mouse control. High germination, low moisture. Bard Selden, Tunica, Miss.

FISCHBEIN PORTABLE BAG CLOSERS in stock for immediate shipment. Write for circular and prices. Douglas L. Mains Co., 1034 College Ave., Wheaton, Ill. Phone Montrose 8-4040.

ANDERSON & FRENCH PRESSES AUXILIARY EQUIPMENT FOR SOYBEANS AND OTHER OIL SEEDS
PITTOCK & ASSOCIATES
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USED MOISTURE TESTERS— Don't pay a fancy price for a new tester when we can sell you an excellent factory reconditioned instrument. All popular makes available. Prices start at \$125. Send for FREE CATALOG on grain and seed testing and handling equipment. Burrows Equipment Co., 1316-D Sherman Ave., Evanston, Ill.

FOR SALE—ANDERSON Expellers and French screw-presses, cookers, driers, 5-high, 48-inch crushing rolls, 36-inch attrition mills, sewing machines, hammermills, cracking rolls, filter presses. Ray L. Jones, 1923 Hayselton Drive, Jefferson City, Mo.

WANTED: FLAKING AND CRACKING rolls, meal coolers and driers and rollermills. Soybean Digest, Box 319-J, Hudson, Iowa.

Careful Harvesting and Storing Pay

By JIM FEATHER

(From Nebraska Certified Seed News)

THREE OR FOUR soybeans left in the field per square foot—only a thimbleful it may seem. Yet these beans can mount up to a 1-bushel loss per acre—a fact worth remembering.

Soybeans for seed need special care and careful harvesting methods can greatly reduce losses which commonly reach 10% to 20% of the normal soybean crop.

Start your combining as soon as the beans reach 14% moisture. If drying facilities are available they may be harvested at moisture levels up to 18% and dried without injury if precautions are followed.

A combine cylinder speed of 50% of normal, about 500 revolutions per minute, is usually satisfactory. The chief problem is to harvest as much of the crop as possible with a minimum of splits, as germination can be lowered with the slightest crack in the seedcoat.

Harvesting beans that are too dry

can result in serious cracking. The lower the moisture content the more chance of injury. A combine may even have to be readjusted on a warm afternoon from its original morning setting as the moisture content can vary as much as 4% to 5% in one day.

It is difficult to avoid injury of the seed when it gets as low as 8%. This can be illustrated by data obtained from the Iowa Agricultural Experiment Station:

INFLUENCE OF MOISTURE CONTENT OF SEED WHEN THRESHED UPON GERMINATION AND PERCENT BREAKAGE

Moisture content at harvest	Germination of hand-threshed sample	Germination of threshed sample	Percent breakage in threshing
8.1%	97	87	13
10.4	99	97	8
12.2	99	97	4
13.7	98	96	2
16.1	98	94	1

Other tests run at Iowa State University show that seed with cracked coats will produce fewer and poorer sprouts than good seed. These were caused mainly from high cylinder speeds, improper concave setting, and too many tailings returned to the cylinder.

No visible sign of injury percent	Seeds with broken seedcoats percent
Normal sprouts	97 56
Abnormal sprouts	7 34
No sprouts	1 10

It is important to keep your combine cutter bar as close to the ground as possible. Iowa experiments show that cutter bar losses increase at the rate of 1.4 bushels per acre for each inch above the ground, and have caused losses amounting to 73% of total beans left in the field.

Special guards or pickup fingers sometimes can be used if there is a prevalence of down plants at harvest time.

Soybeans can be harvested with the regular sieve equipment used for wheat but more wind will likely be needed. Better cleaning may result from the use of a weed screen with openings larger than those used for small grains.

Once the yellow gold is out of the field, don't injure the seed by drying at too high temperatures. Seed beans should never be dried at tem-

peratures above 110°. Higher temperatures will severely damage the soybeans, a recent report from a drier manufacturer indicates. About 10 to 18 hours of drying time will be required for beans of 18% moisture.

It is then recommended that the beans be cooled by blowing cool air through them for 2 hours. Best results were obtained from drying in depths not over 8 to 10 feet, the manufacturer reports. Soybeans will keep safely at 13% moisture or less.

Be seedwise and dollarwise. Make your operating instruction books your closest friends this time of year. It's too late after the job is completed.

Yugoslav Acreage Less Than Planned

ACREAGE planted to oilseed crops in Yugoslavia in 1959 is reportedly less than planned, according to USDA's Foreign Agricultural Service.

acres of soybeans in Yugoslavia, but only 23,760 acres are said to have been contracted, and 22,000 were planted by May 20. Production in 1958 was 184,000 bushels from 21,000 acres.

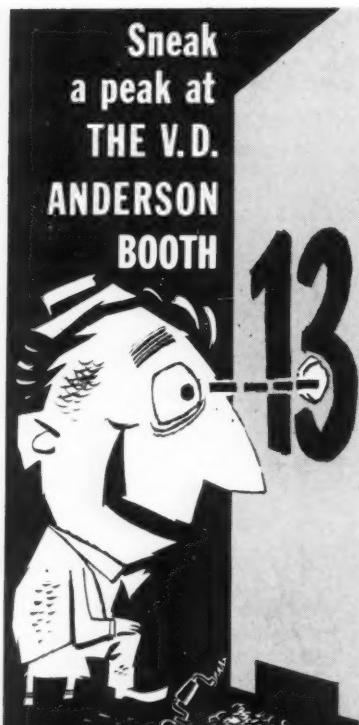
Farmers have not carried out their intentions to grow more soybeans instead of other oilseeds because crushers have shown little interest in processing soybeans at present prices and processing costs.

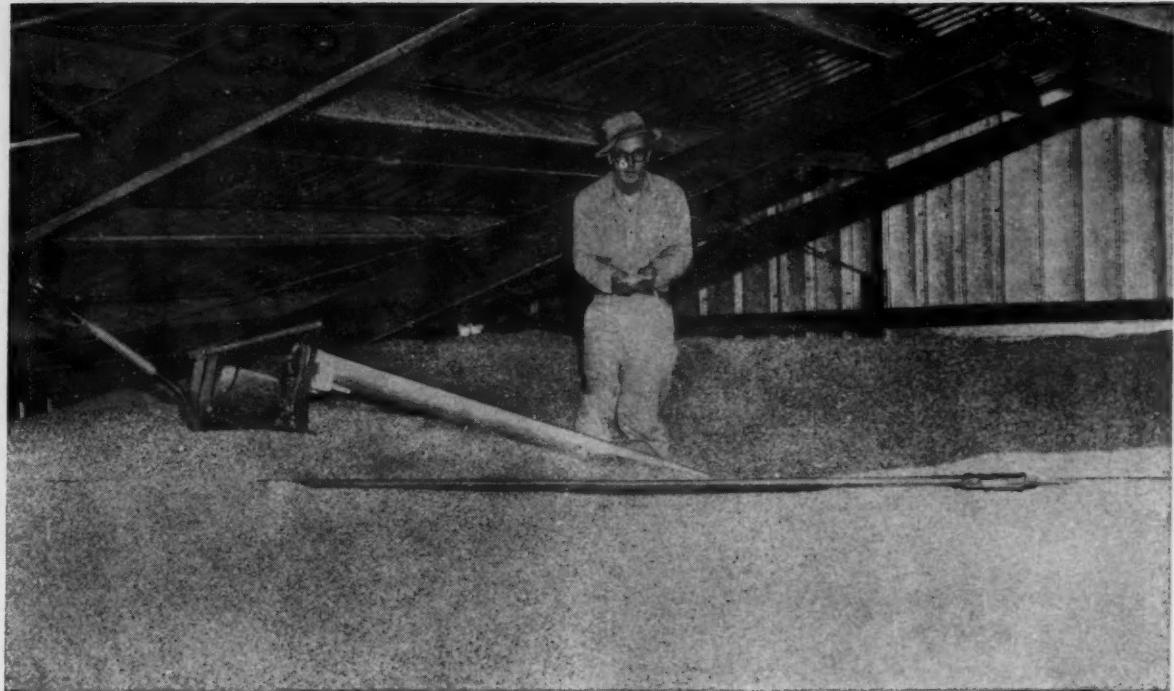
Yugoslavian stocks of oilseeds and imports of U. S. soybean oil, plus imports of 770,000 bushels of Manchurian soybeans, are expected to cover demands for both edible and technical oils this year, according to the press.

Some Soybean Acres Planted in Australia

ABOUT 1,500 ACRES have been planted to soybeans in Australia this year, reports U. S. Department of Agriculture's Foreign Agricultural Service. This is the first commercial planting of soybeans there, although experimental plots have been grown. A government program is encouraging new crops, and unofficial reports indicate increasing attention to oilseed production in order to reduce import needs of fats and oils.

Please mention the Soybean Digest when writing to our advertisers.





Butler flat storage may cost a few cents a bushel more...

BUT IT'S WORTH MORE!

Before you invest in "bargain" grain storage buildings stop and think of your investment in grain versus the risk in the building. Take a 100,000-bushel building full of corn at \$1.25 a bushel, for example. The building is protecting an investment of \$125,000 in grain.

But a leaky roof could bring that grain down to sample grade, and cost you half your investment — that's far more than you actually paid for the building itself.

Losing only a couple of carloads (3,600 bushels) could cost as much as \$4,500. And in a 100,000-bushel building, it figures out to $4\frac{1}{2}$ ¢ a bushel.

Why gamble your grain investment in "bargain" storage? Butler, the safest flat storage may cost only a few pennies a bushel more. Why is Butler the safest storage?

First, Butler buildings have been engineered by experts — men who have been in the grain storage business longer than most ... know it better.

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And, Butler doesn't skimp or leave out many of the little, but important details that give a grain storage building extra strength ... extra weather-tightness.

Before you invest in flat grain storage, contact your nearby Butler Builder. He'll be glad to show you why Butler flat storage is the lowest-cost safe storage in the long run. Or write direct.



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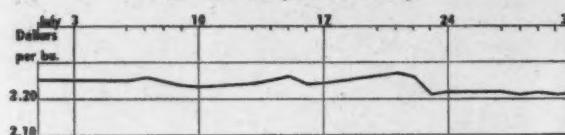
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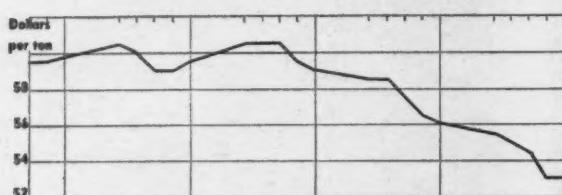
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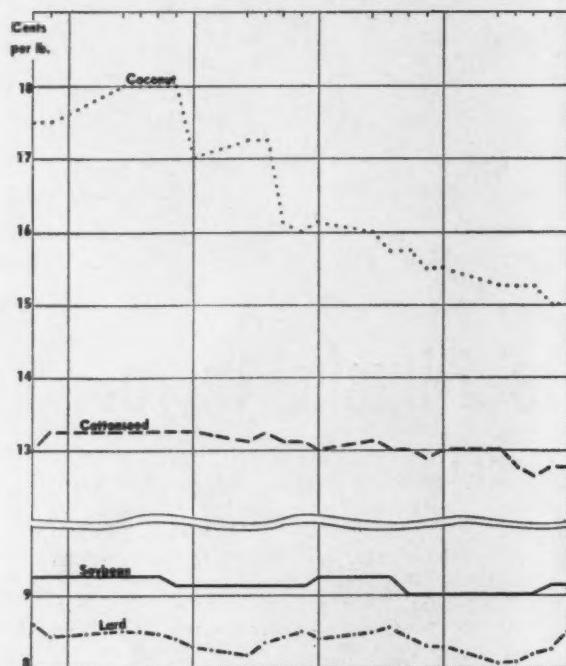
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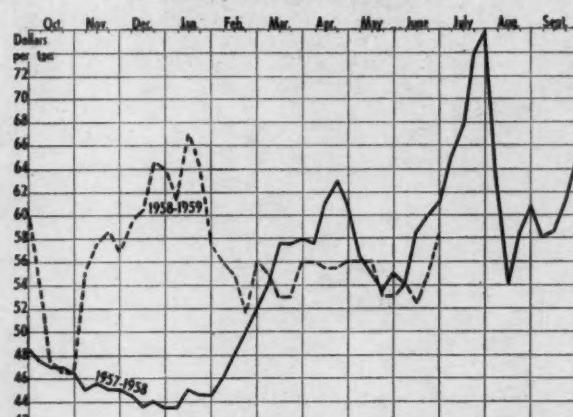


TRENDS AT A GLANCE (Weekly Close)

No. 1 Cash Soybeans, Chicago



Bulk Soybean Oil Meal, Decatur



Crude Soybean Oil, Tankcars



A slow feed mixer business caused soybean meal prices to tumble.

Coconut oil lost 3¢ during July, continuing the drop begun in June.

BYPRODUCTS. The price of soybean fatty acids remained at 15½¢ per pound during July. Acid soybean soap stock advanced from 6½¢ to 6½¢ and raw soybean soap stock remained at 2¾¢ per pound.

July Markets

CASH BEANS, meal and oil markets all lost some on net during July as the new crop season approached with its lower government price support on soybeans.

Big factor affecting the thinking of the trade was the government's July 10 report which placed the 1959 soybean acreage at about 2 million under last year. There was a growing belief that this year's crop might not more than cover next year's needs.

Otherwise it was a weather market, reacting both to reports of threatened drought in the central bean belt, and to rains when they came.

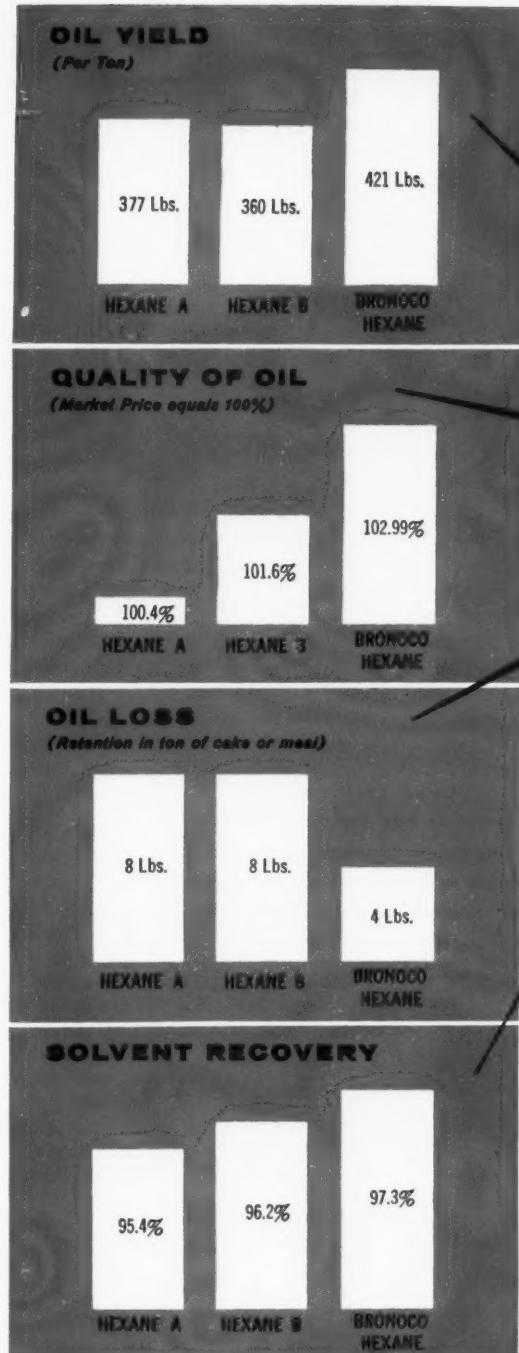
The large cotton acreage reported by the Department of Agriculture—up 28% from last year—indicating a possible larger production of cottonseed oil, contributed to the pressure on soybean oil.

1957 AND 1958 SOYBEAN CROPS

1958-59 1957-58

Total soybeans placed under price support as of June 30	140,204,556 bu.	90,554,881 bu.*
Quantity repaid as of June 30	40,994,975 bu.	29,765,635 bu.*
Total delivered as of June 30	57,211,689 bu.	
Soybeans crushed Oct. 1-June 30	312,233,000 bu.	267,163,000 bu.
Exported Oct. 1-June 30	88,986,000 bu.	70,965,000 bu.
Balance on hand July 1 for processing, export or carryover	163,277,000 bu.	121,484,000 bu.
Total soybeans inspected for overseas export plus lake shipments to Canada Oct. 1-July 24	96,221,493 bu.	77,000,048 bu.

* 1957-58 figure is for June 15.



Top This!

1 Produce up to 60 pounds more oil per ton of bean or seed!

1 Get prices up to 2½% higher for premium quality oil!

1 Cut oil retention in cake as much as 4 pounds per ton!

1 Save up to 40 extra gallons of solvent out of every 1000!

More production—more quality—more profit—are the reasons why so many leading oil mill operators are switching to Bronoco Balanced Composition Hi-Efficiency Hexane.

The figures at left show comparative results for a six-month test operation by one processor, in three widely separated plants, using Bronoco Hexane and two other popular solvents. More than higher yield and lowest possible loss factor, the premium quality oil had uniformly better color and less odor—and brought prices as much as 2½% over the market.

This one of many typical examples indicates you can get results as good or better with Bronoco Balanced Composition Hexane. See it, test it, in your own laboratory. Wire, phone or write for generous samples and complete information.

TYPICAL ANALYSIS

Aromatics	1.92%
Total Naphthenes.....	24.04%
Total Paraffines.....	74.04%
	100.00%

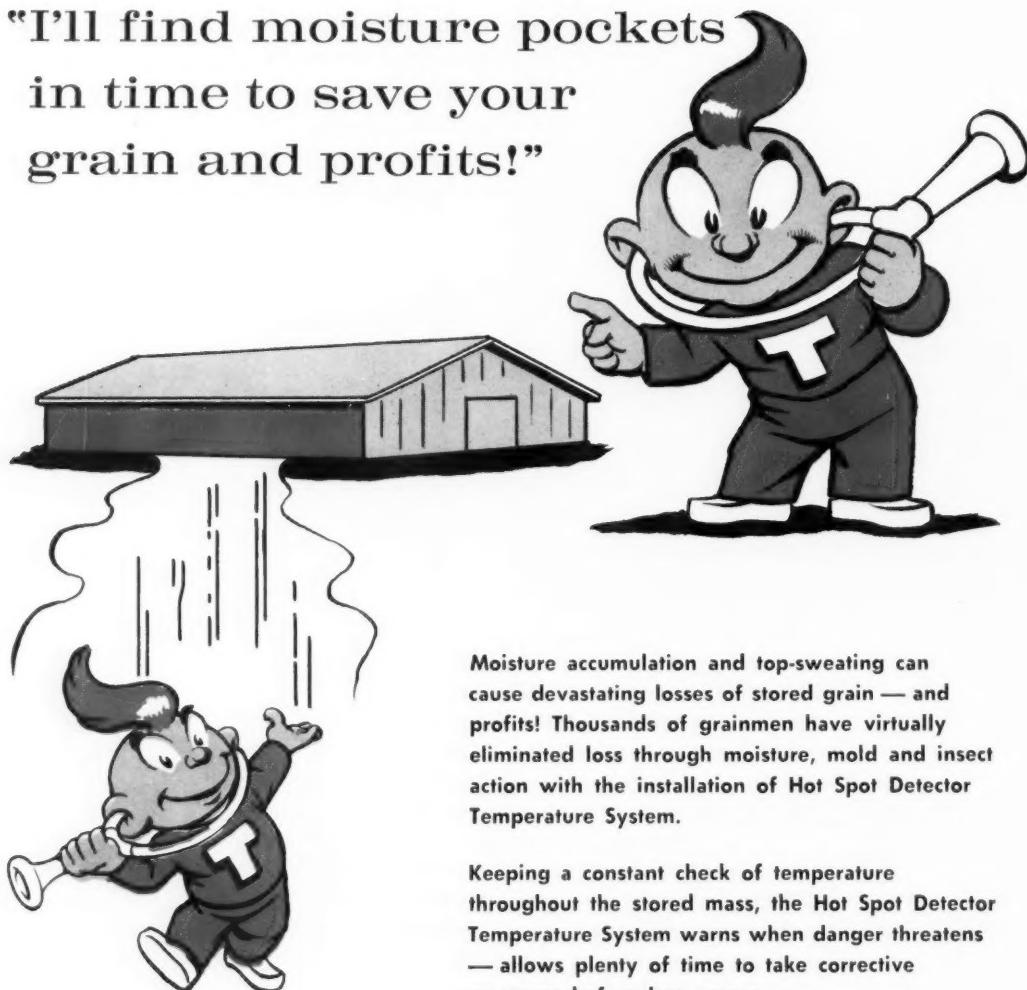
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Thermy* says:
"I'll find moisture pockets
in time to save your
grain and profits!"



Moisture accumulation and top-sweating can cause devastating losses of stored grain — and profits! Thousands of grainmen have virtually eliminated loss through moisture, mold and insect action with the installation of Hot Spot Detector Temperature System.

Keeping a constant check of temperature throughout the stored mass, the Hot Spot Detector Temperature System warns when danger threatens — allows plenty of time to take corrective measures before loss occurs.

Write today for the fascinating story of the Hot Spot Detector Temperature System.

* Thermy means "Thermocouple" — the amazing heart of the Hot Spot Detector Temperature Systems that transmit the temperature from your grain to you.

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NEW PRODUCTS and SERVICES

ENGINEERING SERVICE. V. D. Anderson Co., Cleveland, announces an engineering service to be made available to oil mills, rendering plants and meat packing rendering departments.

In explaining this service, a company executive stated that with the rapid technological advances being made in extraction processes, there is today a definite need for an engineering service qualified to consult with oil mill and other executives about complete plants as well as modernization programs in order to correlate the new advancements and bring about more efficient extraction operations.

In view of the above need, Anderson engineers are designing and engineering complete new processing facilities, as well as analyzing, renovating and expanding existing facilities.

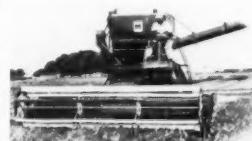
Wherever possible, the Anderson organization converts existing equipment to a modern process, so that frequently with modest expense they are able to bring old but still serviceable machinery up to date.

A special brochure outlining the foregoing engineering service in detail is available. For a complimentary copy write Soybean Digest 8a, Hudson, Iowa.

COMBINE. International Harvester's newest and biggest self-propelled combine, the McCormick No. 151 Harvester-Thresher, available with 12-, 14-, or 15-foot-wide grain platform, has big separating and cleaning capacity for heavy yields and large acreage operations.

Ease of operator service and maintenance is assured through: prelubricated sealed bearings that cut service time to a minimum (only five grease fittings require daily lubrication); top-mounted engine for ready accessibility and freedom from dust and dirt; easy access to interior of combine through large inspection doors on each side and top of machine; and a roomy operator's platform located high and to the left for driver's comfort and wide-open view to the rear and of the crop line and cutter bar.

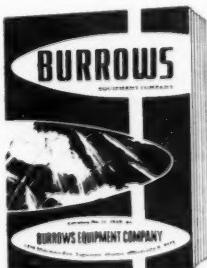
For further information write Soybean Digest 8c, Hudson, Iowa.



CATALOG. Burrows Equipment Co. announces the publication of its new catalog, No. 11, comprising a complete source of supplies for the grain, feed and seed industries.

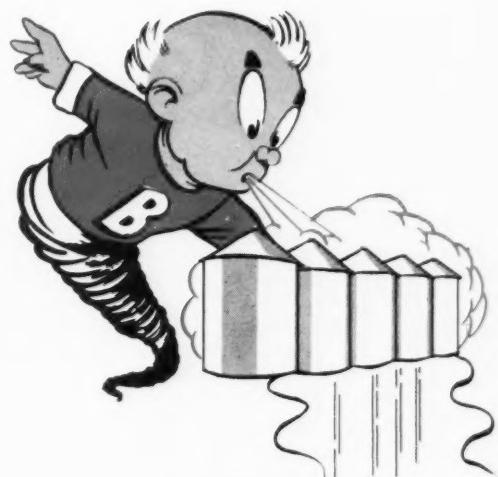
Parke Burrows, president, says the catalog contains many new items that will be of vital interest to the trade. A copy will be automatically sent to all concerns that have received previous issues.

For a free copy of the new Burrows catalog, write Soybean Digest 8b, Hudson, Iowa.



AUGUST, 1959

Breezy* says:
**"Engineered aeration
keeps air moving—
offsets moisture
accumulation!"**



Accumulation of moisture and top-sweating can be controlled with the Hot Spot Engineered Aeration System.* Air is circulated throughout the mass, dispersing moisture accumulation and maintaining temperature at a level where insect and mold action is dormant.

Operated in combination with the Hot Spot Detector Temperature System, a Hot Spot Engineered Aeration System stands ready to take corrective action when danger threatens. Learn how Hot Spot can help you. Write today for the complete Hot Spot Engineered Aeration story.

NOTES FROM BREEZY'S AERATION HANDBOOK . . .

* Grain storage aeration systems may be operated by automatic control to provide maximum hours of fan operation within the desired atmospheric temperature and humidity range. The central action is achieved by high and low limit thermostats and by a high limit relative humidity device. The net cooling effect depends upon total fan operating time as well as the air flow rate. An automatic control can be on the job twenty-four hours per day, starting the system whenever temperature and humidity are correct for aeration.

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IN THE MARKETS

EXPORTS. Preliminary data on U. S. exports of soybeans and soybean oil for May 1959, with comparable data for May 1958 and cumulative totals for the marketing years 1957-58 and 1958-59 to date, by Foreign Agricultural Service, U. S. Department of Agriculture.

	May	October-May			
	Unit	1958	1959	1957-58	1958-59
Soybeans	bu.	6,644,175	9,219,494	65,875,299	79,406,178
Soybean oil:					
Crude	lb.	37,267,012	7,927,703	119,655,945	232,601,784
Refined but further processed	lb.	8,223,291	10,102,787	113,203,663	29,865,105
Refined, deodorized and hydrogenated	lb.	148,532,972	30,537,899	216,400,517	219,434,925

Soybeans: Inspections for export by ports and lake shipments to Canada June 1959 (1,000 bu.)

	Lake Ports	
Norfolk	268	Chicago 1,611
Subtotal	1,287	Duluth and Superior 129
Gulf		Toledo and Saginaw 797
New Orleans	3,232	Subtotal 2,537
Mobile	2,027	Totals
Port Allen	1,498	June 1959 9,581
Subtotal	6,757	Jan.-June 1959 49,539

Based on weekly reports of inspections for export by licensed inspectors and does not include rail or truck movement to Canada or Mexico.

¹ Includes 19,166 bushels of soybeans shipped from Morehead City, N. C.

Soybean: Inspections for export by coastal areas and country of destination June 1959 (1,000 bu.)

	Great Lakes	
United Kingdom	56	Canada 2,213
Taiwan (Formosa)	193	United Kingdom 195
Other	38	Belgium 129
Subtotal	287	Subtotal 2,537
Gulf		Grand total 9,581
Cuba	54	Total Jan.-June '59 49,539
Venezuela	92	Total Jan.-June '58 31,375
Denmark	448	
The Netherlands	1,236	
Belgium	149	
France	271	
West Germany	797	

Based on weekly reports of inspections for export by licensed inspectors and does not include rail or truck movement to Canada or Mexico. In some cases, the ultimate destination of the soybeans exported is not shown on the inspection reports. Therefore, the quantity for each country may vary from official Census data which are based on custom declarations.

Soybeans: Inspections for export by ports and lake shipments to Canada July-June 1958-59 (1,000 bu.)

	Lake Ports	
Philadelphia	2,000	Chicago 8,720
Baltimore	7,637	Duluth and Superior 129
Norfolk	8,340	Toledo and Saginaw 4,130
Subtotal	118,181	Subtotal 12,979
Gulf		Totals
New Orleans	40,423	July-June 1958-59 103,040
Mobile	14,337	July-June 1957-58 87,636
Port Allen	17,120	
Subtotal	71,880	

Based on weekly reports of inspections for export by licensed inspectors and does not include rail or truck movement to Canada or Mexico.

¹ Includes 204,544 bushels of soybeans shipped from Morehead City, N. C.

Cottonseed and soybean oils and lard: Exports under Title I, Public Law 480 programs, and total exports, October 1954-June 1959 (million pounds)

Type of oil	Oct. 1-Sept. 30					Oct. 1-June 30					
	1954-55		1955-56		1956-57		1957-58		1958-59		
Exports under P.L. 480:											
Cottonseed	117	291	55	97	95	65					
Soybean		279	495	592	391	493					
Total oils	117	570	550	689	486	558					
Lard		112	65	3	3	.....				
Total exports:											
Cottonseed	1710	1611	423	248	233	304					
Soybean	50	557	807	803	545	581					
Total oils	760	1,168	1,230	1,051	778	885					
Lard ²	528	663	530	394	309	377					

¹ Includes foreign donations under Section 416, Title III, Public Law 480.

² Revised to exclude shipments to U. S. territories. ³ June exports estimated. Foreign Agricultural Service.

Commodity	Title I, P. L. 480 exports July 1958			July 1958-June 1959					
	Metric	tons	Unit	Quantity	Metric	tons	Unit	Quantity	
Cottonseed oil	20,051	Lbs.	44,206,000	26,978	Lbs.	59,477,000			
Soybean	36,296	Lbs.	80,019,000	314,103	Lbs.	692,478,000			
Foreign Agricultural Service.									

STOCKS ON FARMS. July 1 stocks of soybeans on farms are estimated at 35.4 million bushels, reports Agricultural Marketing Service, U. S. Department of Agriculture. These stocks approached the record holdings of 36.3 million on July 1, 1957. The North Central States held 96% of the stocks. In this area, Ohio, Indiana, Illinois, Minnesota, Iowa, and Missouri accounted for 90% of the U. S. total. The Apr. 1 to July 1 disappearance from farms totaled 89.2 million bushels. This was 1.3 million bushels short of the record Apr. 1 to July 1 disappearance of a year earlier.

Planting was nearly complete by July 1, so only a small quantity of seed remains on farms. Government loans on soybeans matured on May 31. A small quantity was resealed on farms and some of the soybeans on which loans matured had not yet been moved from farms by July 1.

Soybean stocks on farms on July 1 (1,000 bu.)

State	Average		State	Average	
	1948-57	1958		1948-57	1958
N. Y.	10	11	Del.	52	128
N. J.	30	28	Md.	49	85
Pa.	31	18	Va.	90	121
Ohio	1,090	1,307	N. C.	135	309
Ind.	1,690	2,397	S. C.	49	84
Ill.	3,949	4,386	Ga.	10	28
Mich.	102	208	Ky.	94	77
Wis.	47	69	Tenn.	57	130
Minn.	1,976	6,028	Ala.	16	30
Iowa	2,948	9,159	Miss.	105	234
Mo.	748	924	Ark.	179	488
N. Dak.	30	331	Okla.	7	10
S. Dak.	101	307	Nebr.	66	168
			Texas	1	8
Kans.	75	49			
			U. S.	13,751	26,961
					35,444

¹ Short-time average. Crop Reporting Board, AMS, USDA.

SUPPLY, DISTRIBUTION of soybeans, 1955-58, reported by Agricultural Marketing Service (1,000 bu.)

	Soybeans: Supply and distribution				
	1958-59	1957-58	1956-57	1955-56	
Carryover, Oct. 1	21,083	9,897	3,731	9,949	
Production	574,413	483,715	449,446	373,522	
Total supply ¹	595,496	493,612	453,177	383,471	
Farm use, including seed for season	31,000	34,000	42,000	30,000	
Quantity remaining for processing, export, or carryover	564,496	459,612	411,177	353,471	
Disappearance, October through June 30:					
Crushed for oil or processed ²	312,233	267,163	243,964	221,078	
Exported	88,986	70,965	68,390	59,186	
Total	401,219	338,128	312,354	280,264	
Balance on July 1 for processing, export, or carryover	163,277	121,484	98,823	73,207	

¹ Imports not included because negligible. ² No allowance is made for new crop crushings prior to Oct. 1. ³ Estimated.

PRICE SUPPORT. Repayments on 1958-crop soybean loans totaled 40,994,975 bushels through June, reports the U. S. Department of Agriculture.

Loans and purchase agreement totals, loan repayments and quantities delivered through June on 1958 crops

	Warehouse and farm loans			Purchase agreements		
	Total	Quantity repaid	Quantity delivered	Quantity under agreements	Quantity delivered	
125,902,988	40,994,975	57,056,907	14,301,568	154,782		

Through June, farmers had resealed 4,425,522 bushels of 1958-crop soybeans, USDA reports.

PRICES. Average prices for soybeans received by farmers, effective parity, and support rates, reported by Agricultural Marketing Service (dollars per bushel).

	Effec-	Av. price	National
	tive	as percent	average price
	parity	of parity	support rate
Average farm price			
June 15, 1959	1958	1959	1958
1959	1958	1959	1957
2.09	2.13	2.13	2.09
2.90	72	72	2.09
June 15, 1959	1958	1959	1957
1959	1958	1959	1957
2.09	1.85	1.85	2.09
June 15, 1959	1958	1959	1957
1959	1958	1959	1957
2.09	2.09	2.09	2.09

Average farm and parity prices from crop reporting board.

Soybean prices compared with market value of soybean oil and soybean meal

Month	Soybean oil		Soybean meal		Market price of soybean oil	Spread between soybean oil and soybean meal
	Average price at crushing plant	Value per cwt. per pound	Bulk price at Decatur plant	Value per ton	Value from bushel	
June 1959	9.5	1.04	54.80	1.29	2.33	2.20
May 1959	9.5	1.04	55.40	1.30	2.34	2.23
April 1959	9.2	1.01	55.90	1.31	2.32	2.20
March 1959	9.3	1.02	55.10	1.29	2.31	2.17
June 1958	10.2	1.12	57.65	1.35	2.47	2.23

¹ Based on Census Bureau reports that a bushel of soybeans yields 11 pounds of oil and 47 pounds of meal. This table is for statistical comparison only.

STOCKS. Soybean stocks at 157 million bushels in all storage positions on July 1 were the largest of record for the date and nearly 50% above a year ago, the previous high, reports Agricultural Marketing Service. Terminal, processor, and elevator and warehouse stocks were above July 1, 1958 and record for that date.

Stocks on July 1 indicate a disappearance during the 9 months October 1958-June 1959 of 438 million bushels from a supply of 595 million bushels. The supply consisted of a carryover of 21 million bushels plus the 1958 production of 574 million bushels. During the period 312 million bushels were processed for oil and nearly 90 million bushels were exported. Seed, feed, and losses amounted to about 31 million bushels. In addition there were at least 4 million bushels of new crop crushings before Oct. 1, 1958. Thus the indicated and known disappearance are in close balance.

Stocks of soybeans July 1, 1959 with comparisons (1,000 bu.)

	July 1, Av. 1948-57	July 1 1958	April 1 1959	July 1 1959
On farms ¹	13,751	26,961	124,623	35,444
Terminals ²	4,491	10,839	26,839	16,263
Commodity Credit Corp. ³	201	0	1,895	102
Processing plants ⁴	25,187	36,194	73,993	44,883
Int. mills, elev. & whses. ^{1,4}	9,513	33,778	95,956	60,433
Total	53,143	107,772	323,306	157,125

¹ Estimates of the crop reporting board. ² Commercial stocks reported by Grain Division, AMS, at 45 terminal cities. ³ Owned by CCC and stored in bins or other storages owned or controlled by CCC; other CCC-owned grain is included in the estimates by positions. ⁴ All off-farm storages not otherwise designated, including merchant mills. ⁵ Firms reporting crushings and stocks of soybeans to the Bureau of the Census.

Off farm total¹

July 1

	1958	1959	1958	1959	Total ² all positions
	1,000 bushels	1,000 bushels	1,000 bushels	1,000 bushels	July 1
Ohio	6,462	7,456	7,769	9,329	
Indiana	4,850	—	7,247	—	
Illinois	24,802	33,384	29,188	38,999	
Minnesota	10,190	14,025	16,218	22,655	
Iowa	20,845	30,004	30,004	41,018	
Missouri	2,760	5,033	3,684	6,419	
N. Carolina	—	1,579	—	1,987	
Tennessee	—	8,322	—	8,452	
Arkansas	—	3,287	—	3,535	
Others*	10,902	18,591	13,662	24,731	
U. S.	80,811	121,681	107,772	157,125	

* Other states and unallocated to avoid disclosing individual operations.

¹ Includes stocks at interior mills, elevators and warehouses, commercial stocks reported by grain division, AMS, at terminals, and those owned by Commodity Credit Corp. which are in bins and other storages under CCC control. ² Off-farm total plus farm stocks.

INSPECTIONS. Soybeans inspected by grade and percent, reported by Agricultural Marketing Service.¹

	May 1959	April 1959	May 1958	Oct.-May 1958-59	Oct.-May 1957-58		
	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.	1,000 bu.		
No. 1	6,338	34	5,887	31	4,288	24	
No. 2	9,362	50	9,044	47	8,204	45	
No. 3	1,948	10	2,473	13	4,235	23	
No. 4	739	4	1,217	6	992	6	
Sample	385	2	638	3	393	2	
Total	18,772	100	19,259	100	18,112	100	
Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels.	2	Of the May receipts, 400 bushels were black, and the remainder yellow soybeans. Inspections of soybeans in May included 5,084,000 bushels as cargo lots, 1,550,675 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.	3	298,880	100	273,836	100

¹ Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels.

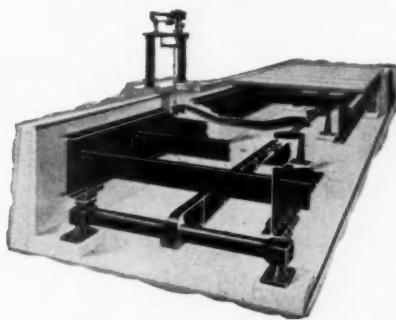
² Of the May receipts, 400 bushels were black, and the remainder yellow soybeans. Inspections of soybeans in May included 5,084,000 bushels as cargo lots, 1,550,675 bushels as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.

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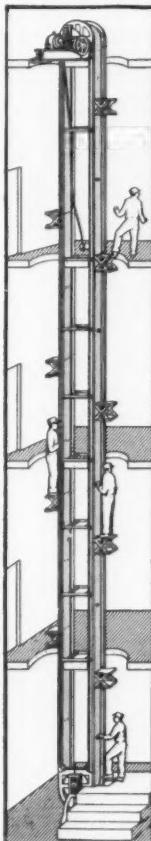
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PROCESSING OPERATIONS. Reported by Bureau of the Census for May and June 1959.

Primary products except crude oil at crude oil mill locations: Production, shipments and transfers, and stock, June 1959-May 1959 (1,000 tons)

Products ¹	Production		Shipments and transfers		Stocks end of month	
	June 1959	May 1959	June 1959	May 1959	June 30, 1959	May 31, 1959
Soybean:						
Cake and meal	770.2	842.5	753.8	793.1	166.0	149.6
Millfeed (hull meal)	18.1	19.8	18.5	17.8	5.9	6.3

¹ Data on soy flour and lecithin no longer collected monthly.

Soybeans: Net receipts, crushings, and stocks at oil mills, by states, June 1959-May 1959

State	Net receipts at mills ¹		Crushed or used		Stocks at mills	
	June 1959	May 1959	June 1959	May 1959	June 30, 1959	May 31, 1959
U. S.	821.0	765.6	994.7	1,091.6	1,346.5	1,520.2
Arkansas	(2)	(2)	19.2	19.7	37.1	(2)
Illinois	305.7	252.4	302.9	337.0	377.0	374.3
Indiana	(2)	59.7	(2)	93.3	(2)	(2)
Iowa	184.4	153.0	165.3	181.0	163.6	144.5
Minnesota	47.8	74.8	80.2	85.9	36.4	68.8
Mississippi	(2)	1.0	36.2	42.8	(2)	70.4
Missouri	(2)	(2)	(2)	(2)	(2)	(2)
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)
North Carolina	4.1	5.8	13.5	12.4	39.4	48.8
Ohio	77.9	58.6	89.3	103.4	162.1	173.5
Tennessee	78.2	64.7	101.1	107.0	177.7	200.6
All other	122.9	95.6	187.0	109.1	268.1	345.2

Note: Detail figures may not add to totals because of independent rounding. ¹ Net receipts for each state are derived from the quantity of beans crushed and net change in stocks. ² Included in "All other" to avoid disclosure of figures for individual companies.

Soybean products: Production and stocks at oil mill locations, by states, June 1959-May 1959

State	Crude oil (millions of pounds)		Cake and meal (thousands of tons) ¹			
	Production	Stocks	Production	Stocks	June	May
	June 1959	May 1959	June 1959	May 1959	June 1959	May 1959
U. S.	355.2	385.5	138.8	153.5	788.3	862.3
Arkansas	7.0	7.1	1.6	1.2	14.2	15.1
Illinois	110.0	120.6	47.9	51.9	234.6	260.5
Indiana	(2)	32.6	(2)	(2)	74.6	(2)
Iowa	58.7	64.5	23.2	24.1	134.1	146.6
Minnesota	28.4	30.1	24.4	20.3	64.3	69.2
Mississippi	14.0	15.8	6.0	7.8	29.1	33.1
Missouri	(2)	(2)	(2)	(2)	(2)	2.8
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)
N. Carolina	4.2	3.9	0.5	1.2	10.7	9.6
Ohio	30.4	34.6	10.6	10.9	72.4	83.2
Tennessee	37.0	38.3	8.7	14.5	79.6	83.3
All other	65.5	38.0	15.9	21.6	149.3	87.1

Note: Detail figures may not add to totals because of independent rounding. ¹ Includes millfeed (hull meal). ² Included in "All other" to avoid disclosure of figures for individual companies.

FACTORY USE VEGETABLE OILS for May 1959. Reported by Bureau of the Census.

Fats and oils production and consumption in selected products; factory and warehouse stocks: May 1959 (million pounds)

Seed	Production		Factory consumption		Consumed in selected products ²		Edible products	
	Crude vegetable oils	Refined vegetable oils ¹	Consumed in refining	Total	Baking or frying fats	Salad or cooking oils	Margarine	Other edible products ³
	June	May	June	May	June	May	June	May
Factory consumption								
Cottonseed oil	65.4	69.9	74.3	93.7	29.0	53.0	8.7	2.7
Soybean oil	385.5	272.9	283.6	278.7	93.8	84.3	79.6	2.9
Vegetable oil foots	17.0	xxx	xxx	14.1	—	—	—	—
Factory and warehouse stocks								
Cottonseed oil	...	...	...	0.2	344.3	87.1	257.2	—
Soybean oil	...	9.1	...	8.7	512.6	280.9	231.7	—
Vegetable oil foots	2.3	0.2	8.9	2.7	40.8	xxx	xxx	—

Detail figures may not add to totals because of independent rounding. ¹ Usage of crude oils in refining (alkali or caustic washing) is shown only for major vegetable oils. Production of refined oils covers only once-refined oils. Separate data on crude and refined oils are no longer collected for oils other than those specified. Degummed soybean oil is reported as crude oil. ² Includes hydrogenated fats and other fats and oils "in process," (e.g. refined cottonseed oil includes stearin, hydrogenated or otherwise). ³ Includes confectioners' fat and similar products. ⁴ Quantities consumed in making the following products include: animal feeds: total 43.0, inedible tallow and grease 40.3; lubricants and similar oils (including quantities consumed in greases, cutting oils, dielectric oils, core oils, brake fluids, and metalworking); total 8.4, inedible tallow and grease 7.0, marine mammal 1.4; resins and plastics: total 13.9, soybean 6.3, linseed 1.9, castor 4.4; linoleum: total 2.5, linseed oil 2.5.

Production and stocks: Consumption of crude oils in Refining—May 1959-April 1959 (million pounds)

State	Crude vegetable oils, animal and fish fats		Refined vegetable oils ¹	
	Production	Consumed in warehouse	Factory	warehouse
	May Apr. 1959	May Apr. 1959	May Apr. 1959	May Apr. 1959
Cottonseed oil	65.4	116.5	74.3	113.0
Soybean oil	385.5	365.6	283.6	335.2
Vegetable oil foots	17.0	20.0	xxx	xxx

¹ Usage of crude oils in refining (alkali or caustic washing) is shown only for major vegetable oils. Production of refined oils covers only once-refined oils. Separate data on crude and refined oils are no longer collected for oils other than those specified. Degummed soybean oil is reported as crude oil. ² Includes hydrogenated fats and other fats and oils "in process," (e.g. refined cottonseed oil includes stocks of stearin, hydrogenated or otherwise).

Consumption of vegetable oil foots in fatty acids (million pounds)

State	Total consumption		Used in fatty acids		Percent used in fatty acids	
	Cum.: May	Jan-May	Cum.: May	Jan-May	Cum.: May	Jan-May
	1959	1958	1959	1958	1959	1958
14.1	11.7	64.9	56.5	8.9	62	42.1
29.6	63	53	65	52	52	52

Source: U. S. Bureau of the Census.

TERMINAL STOCKS. Agricultural Marketing Service's commercial grain stocks reports for close of business on Friday or Saturday preceding date of report. (1,000 bu.)

U. S. soybeans in store and afloat at domestic markets ¹	June 30			
	July 6	July 14	July 21	July 28
Atlantic Coast	366	152	183	204
Gulf Coast	3,035	2,519	2,006	1,430
Northwestern	436	494	771	644
Lower Lake	8,298	7,593	7,784	6,991
East Central	3,972	3,771	3,667	3,114
West Central and Southwestern	2,058	1,754	1,724	1,749
Pacific Coast	0	0	0	0
Total, current week	18,165	16,283	16,135	14,132
Total year ago	11,348	11,980	11,271	9,843

U. S. soybeans in store and afloat at Canadian markets	Total stocks in above positions			
	Current week	18,481	16,453	16,322
Total, current week	316	170	187	592
Total, year ago	50	50	144	144

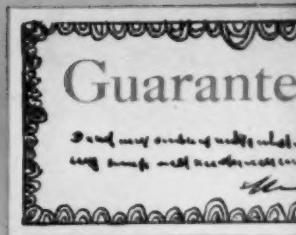
¹ Includes all soybeans in public elevators, including government-owned stocks, at 45 principal markets. Does not include stocks in elevators attached to flour mills, crushing plants, and other processing facilities.

Primary receipts (1,000 bu.) of soybeans at important interior points for week ending:

Chicago	June 26			
	July 3	July 10	July 17	July 24
Chicago	217	681	765	426
Duluth	24	16	6	20
Indianapolis	33	40	35	4
Kansas City	114	209	220	112
Minneapolis	177	173	234	174
Omaha	3	7	8	11
Pearl	20	2	7	—
Sioux City	2	—	14	22
St. Joseph	14	8	14	27
St. Louis	2	8	—	2
Toledo	86	63	96	49
Wichita	10	19	25	51
Totals	702	1,226	1,424	898
Last year	1,109	714	629	567
CCC-owned stocks of soybeans in Chicago	821	820	820	821
Total Chicago soybean stocks	7,101	7,092	7,375	6,450

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HEXANE • Typical Properties

Volatility	Distillation (ASTM D-1078-49T)°F	IBP 152
	10%	153
	50%	154
	90%	155
	Dry Point	156
	% Aromatics	less than 0.3
Solvency Power	Aniline Point °F	143
Color		Crystal Clear

HEPTANE • Typical Properties

Volatility	Distillation (ASTM D-1078-49T)°F	IBP 201
	10%	201
	50%	203
	90%	205
	Dry Point	207
	% Aromatics	less than 0.3
Solvency Power	Aniline Point °F	144
Color		Crystal Clear

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